Service Manual

VL1100 ERS Luminaire

02.9664.0010

PHILIPS

VARI*LITE

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Part number: **02.9664.0010 0**

VL1100 ERS Luminaire Service Manual

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How To Obtain Warranty Service

A copy of the Vari-Lite Limited Warranty was included in the shipping package for this VARI✳LITE product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548) or 1-214-647-7880 or via e-mail at entertainment.service@phil-ips.com request a Return Material Authorization (RMA) for warranty service. You will need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period.

Once you obtain the RMA, pack the unit in a secure shipping container or in its original packing box. Fill out the RMA form included at the end of this manual and place in shipping container along with a copy of your invoice (if available). Write the RMA number legibly on or near the shipping address label and return the unit, freight prepaid to:

Vari-Lite
10911 Petal Street
Dallas, Texas 75238 USA
Attention: Warranty Service / RMA# _____

As stated in the warranty, it is required that the shipment be insured and FOB our service center.

Manual Revision History

VERSION	DATE
Revision 0 (Inital Version)	20 October 2010

Compliance Notice

FCC This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite system, service, and safety guidelines, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

CE

Declaration of Conformity

We declare, under our sole responsibility, that this product complies with the relevant clauses of the following standards and harmonized documents (as applicable):

Safety:

(by Low Voltage Directive 2006/95/EC)

EN60598-1: 1997/A1:1998
EN60598-2-17: 1989/A2:1991
EN60922

Electromagnetic Compatibility:

(by Council Directive 89/336/EEC)

EN55022:1998, Class A
EN61000-4-2: 1995, Performance Criteria: B
EN61000-4-3: 1995, Performance Criteria: A
EN61000-4-4: 1995, Performance Criteria: B
EN61000-4-5: 1995, Performance Criteria: B
EN61000-4-6: 1996, Performance Criteria: A
EN61000-4-8: 1996, Performance Criteria: A
EN61000-4-11: 1994, Performance Criteria: B and C
EN61000-3-2: 1995
EN61000-3-3: 1994

We certify that the product conforms to the protection requirements of council directives: 2006/95/EC (LVD) and 89/336/EEC (EMC)

Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:

CAUTION advising of potential damage to product.

WARNING advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE

1. VARI✻LITE luminaires have been designed for use only with certain Philips and Osram HID lamps. Note lamp type (MSR400, MSR575HR etc.) before replacing lamps. Installing another type of lamp may be hazardous.
2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
3. Replace fuses with same type and rating only.
4. Note distance requirement from combustible materials or illuminated objects for VARI✻LITE luminaires.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK

1. VARI✻LITE luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.
2. Disconnect power before servicing any VARI✻LITE equipment.
3. Servicing to be performed by qualified personnel only.

WARNING: It is not recommended to power any VARI✻LITE luminaire from a dimmer - even in 'NONDIM' mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure. See Vari-Lite Technical Notice TN-229A for more information.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION

1. Many VARI✳LITE luminaires use an HID type lamp that produces UV radiation. DO NOT look directly at lamp.
2. It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example, by cracks or deep scratches.

WARNING:
INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

WARNING:
RF INTERFERENCE

1. This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

ARC LAMP CHARACTERISTIC CONSIDERATIONS

1. Arc lamps require a period of time to relight after a power interruption or a severe voltage dip. In some cases, lamp will automatically relight after it has cooled depending on Lamp Power-Up State (L ON/ LOFF) system configuration setting.
2. Burning position is Universal.

Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:

VORSICHT - weist auf möglichen Produktschaden hin.

WARNUNG - weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

WARNUNG:
HINWEISE ZUM FEUERSCHUTZ

1. VARI✻LITE-Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Philips und Osram HID-Lampen geeignet. Achten Sie auf den Lampentyp (MSR400, MSR575HR etc.), bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.
2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.
3. Ersetzen Sie Sicherungen nur mit Sicherungen vom gleichen Typ und gleicher Stärke.
4. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI✻LITE-Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK

1. VARI✻LITE-Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.
2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI✻LITE-Geräten beginnen.
3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG

1. Viele VARI✻LITE-Scheinwerfer verwenden einen HID-Lampentyp, der UV-Strahlen abgibt. SCHAUEN SIE NICHT direkt in die Lampe.

2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettschirme müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).
2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.
3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.
4. Tragen Sie beim Austausch der Lampen einen Augenschutz.
5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.
6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem flusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.
7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

WARNUNG:
HF-INTERFERENZ

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

BESONDERHEITEN VON BOGENLAMPEN

1. Bogenlampen benötigen eine gewisse Zeitdauer, um nach einem Stromausfall oder einem Spannungsgefälle wieder aufzuleuchten. In einigen Fällen wird die Lampe nach Abkühlung automatisch wieder aufleuchten, je nach der Systemkonfigurationseinstellung des Lampeneinschaltungsstatus (L ON/ LOFF).
2. Die Brennposition ist Universal.

Notes de sécurité

Avant de procéder à l'installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l'installation et l'utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :

ATTENTION Ce symbole annonce que l'appareil risque d'être endommagé.

AVERTISSEMENT Ce symbole annonce qu'il y a risque d'accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES , LES INCENDIES, L'EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES

1. Les luminaires VARI✳LITE ont été conçus pour être utilisés uniquement avec certaines lampes Philips et Osram HID. Vérifier le type de lampe (MSR400, MSR575HR etc.) avant de remplacer les lampes. L'installation d'un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Ne remplacer les fusibles qu'avec ceux du même type, ayant les mêmes caractéristiques.
4. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI✳LITE.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES

1. Les luminaires VARI✳LITE sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l'humidité risque d'endommager le luminaire.
2. Débrancher l'appareil avant de procéder à la révision de tout matériel VARI✳LITE.
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV

1. Plusieurs luminaires VARI✳LITE utilisent une lampe de type HID qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

AVERTISSEMENT:
INTERFÉRENCE RF

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

CONSIDÉRATIONS DES CARACTÉRISTIQUES DE LAMPES À ARC

1. Après une interruption de courant ou une baisse importante de voltage, les lampes à arc mettent du temps avant de se rallumer. Dans certains cas, la lampe se rallumera automatiquemet après s'être refroidie. Cela dépend de la manière dont le système est réglé pour le statut de mise en marche de la lampe (L ON/ LOFF).
2. La position Brûler est Universelle.

Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:

CUIDADO, indica posibles daños al producto.

ADVERTENCIA, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO

1. Las luminarias VARI✻LITE han sido diseñadas para ser usadas solamente con algunas lámparas HID Philips y Osram. Tome nota del tipo de lámpara (MSR400, MSR575HR etc.) antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Reemplaze los fusibles solamente con los del mismo tipo y especificación.
4. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI✻LITE.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO

1. Las luminarias VARI✻LITE están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI✻LITE.
3. El servicio debe ser realizado solamente por personal calificado.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA

1. Muchas luminarias VARI✳LITE usan un tipo de lámpara HID que produce radiación UV. NO mire directamente a la lámpara.
2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.
2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.
3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.
4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.
5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.
6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.
7. Cambie la lámpara si está dañada o deformada termicamente.

ADVERTENCIA:
INTERFERENCIA RF

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

CONSIDERACIONES SOBRE LAS CARACTERÍSTICAS DE LA LÁMPARA DE ARCO

1. Las lámparas de arco requieren un período de tiempo para volver a iluminarse después de una interrupción de energía o de una severa caída de voltaje. En algunos casos, la lámpara se volverá a iluminar en forma automática después que se ha enfriado dependiendo de la configuración del sistema de energía de la lámpara (L ON / L OFF) (L encendida / L apagada).
2. La posición de encendido es universal.

安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。

注意：製品に損傷を与える危険性があります。

警告：人身事故につながる危険性があります。

感電、火災、UV 放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：
火災の発生を防ぐためのヒント

1. VARI*LITE® 照明器具は、ランプを使用するように設計されています。ランプを交換する際は、ランプの種類 (など）を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI*LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：
感電を防ぐためのヒント

1. VARI*LITE® 照明器具は、乾燥した環境で使用するように設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI*LITE® 照明器具を修理点検する場合は、必ず先に電源を切ってください。
3. 照明器具の修理点検は、資格を持つ技師のみが行うようにしてください。

警告：

過度の UV 放射にさらされないためのヒント

1. VARI*LITE® 照明器具の多くは、UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。
2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

警告：

人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。
2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。
3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態で光を発します。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。
4. 再点灯するときには、保護用眼鏡を着用してください。
5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。
6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。
7. 傷がついたランプや熱によって変形したランプは取り替えてください。

警告：

RF 干渉

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

アーク灯の特性

1. 停電後または大きな電圧ディップ後にアーク灯を再点灯する場合は、しばらく時間をおくようにしてください。Lamp Power-Up State）シ
   ステム設定によっては、温度が下がったときに自動的に再点灯される場合もあります。
2. アーク灯は点光源です。

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Introduction

Disclosure

This technical manual is confidential property of Vari-Lite All information contained herein is the sole and exclusive property of Vari-Lite and may not be used, disclosed, or reproduced in any manner without the prior written consent of Vari-Lite

WARNING: It is important to read ALL accompanying safety instructions to avoid damage to the product and potential injury to yourself or others.

About This Manual

This manual provides descriptions, repair procedures, and illustrated parts breakdowns for all configurations of the VL1100 ERS Luminaire. The manual is intended for use by Vari-Lite personnel and by Vari-Lite's Authorized Dealers and Service Centers.

This manual covers the following models:

Model	Part Number	Source	Integral Dimmer	Shutter	Iris
VL1100 TS	20.9664.0001.02	Incandescent	No	Yes	No
VL1100 TI	20.9664.0001.03	Incandescent	No	No	Yes
VL1100 AS	20.9664.0001.12	Arc	Mechanical	Yes	No
VL1100 AI	20.9664.0001.13	Arc	Mechanical	No	Yes
VL1100 TSD	20.9664.0001.22	Incandescent	Electronic 115V	Yes	No
VL1100 TID115	20.9664.0001.23	Incandescent	Electronic 115V	No	Yes
VL1100 TSD230	20.9664.0001.32	Incandescent	Electronic 230V	Yes	No
VL1100 TID230	20.9664.0001.33	Incandescent	Electronic 230V	No	Yes

Note: Performing maintenance procedures contained in this manual may void the product warranty. Refer to the Vari-Lite Limited Warranty card included in the shipping package for this VARI*LITE product.

WARNING: It is not recommended to power any VARI*LITE luminaire from a dimmer - even in 'NONDIM' mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. See Vari-Lite Technical Notice TN-229A for more information.

Additional Documentation

A support web page for Series 1000 luminaires (For all VL1000 and VL1100 ERS models) is available at www.vari-lite.com (follow the Support link).

A user's manual is available for installation and operation of all versions of the VL1100 ERS Luminaire. This manual is only available in electronic (PDF) format.

- VL1100 ERS Luminaire User's Manual (02.9664.0001).

Technical bulletins concerning the latest changes to VARI*LITE equipment are also available at the website Technical Support Center. These are documentation supplements that contain procedures for equipment upgrades, retrofits, and additional repairs. Technical bulletins are integrated into the appropriate equipment manuals as those manuals are revised.

Customer Service

Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

How to Reach Us

For assistance in your area, call the dealer from which your product(s) were purchased. ***or***

Contact an Authorized Service Center. ***or***

Contact the Vari-Lite Customer Service Department, 9am - 6pm CST Monday through Friday, at the following:

phone: 1-877-VARI-LITE (1-877-827-4548) or 1-214-647-7880
fax: 1-214-647-8038
email: entertainment.service@philips.com

Additional Resources

For additional resources and documentation, please visit our website at: www.vari-lite.com and follow the Support link.

CHAPTER 1.

Description

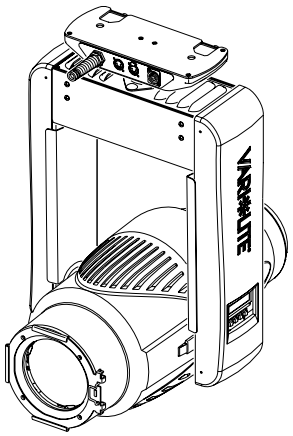
This chapter provides an overview of luminaire features, components and operations.

- **Features**
- **Component Descriptions**
- **Principles of Operation**

SERVICE

Features

Standard Features



VL1100 Ellipsoidal Reflector Spotlight (ERS) luminaires have the following standard features:

- Automated zoom optics system.
- Crossfading CYM color system.
- Diffusion system.
- Six-position rotating gobo wheel (five rotatable, indexable gobo positions and one open gobo position).
- Repositional pan/tilt system via 3-phase stepper motors.
- High-frequency drivers to reduce stationary noise when luminaire is in parked position.
- Control by DMX512 protocol.

Model Specific Features

Each individual configuration has the following specific features:

VL1100 TS Luminaire (20.9664.0001.02 - Black / 20.9664.0001.02.02 - White)

- 1000W Tungsten Halogen lamp source.
- Four-blade shutter framing system.

VL1100 TI Luminaire (20.9664.0001.03 - Black / 20.9664.0001.03.02 - White)

- 1000W Tungsten Halogen lamp source.
- Beam-size iris mechanism.

VL1100 AS Luminaire (20.9664.0001.12 - Black / 20.9664.0001.12.02 - White)

- 575W arc lamp source with external ballast unit.
- Four-blade shutter framing system.
- Mechanical dimmer.

VL1100 AI Luminaire (20.9664.0001.13 - Black / 20.9664.0001.13.02 - White)

- 575W arc lamp source with external ballast unit.
- Beam-size iris mechanism.

- Mechanical dimmer.

VL1100 TSD Luminaire (20.9664.0001.22 - Black / 20.9664.0001.22.02 - White)

- 1000W Tungsten Halogen lamp source.
- 115V on-board electronic IGBT dimmer.
- Four-blade shutter framing system.

VL1100 TID Luminaire (20.9664.0001.23 - Black / 20.9664.0001.23.02 - White)

- 1000W Tungsten Halogen lamp source.
- 115V on-board electronic IGBT dimmer.
- Beam-size iris mechanism.

VL1100 TSD230 Luminaire (20.9664.0001.32 - Black / 20.9664.0001.32.02 - White)

- 1000W Tungsten Halogen lamp source.
- 230V on-board electronic IGBT dimmer.
- Four-blade shutter framing system.

VL1100 TID230 Luminaire (20.9664.0001.33 - Black / 20.9664.0001.33.02 - White)

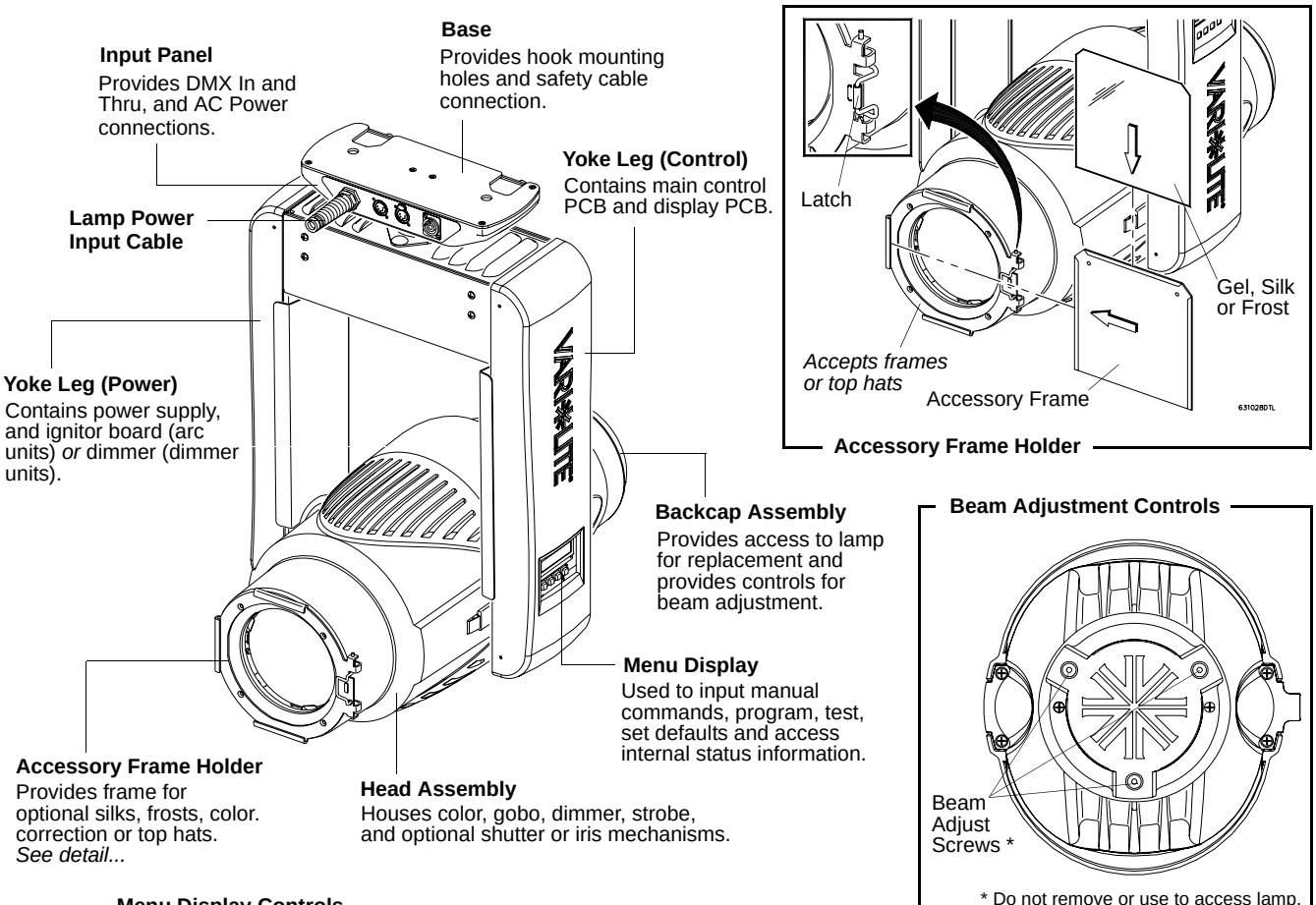
- 1000W Tungsten Halogen lamp source.
- 230V on-board electronic IGBT dimmer.
- Beam-size iris mechanism.

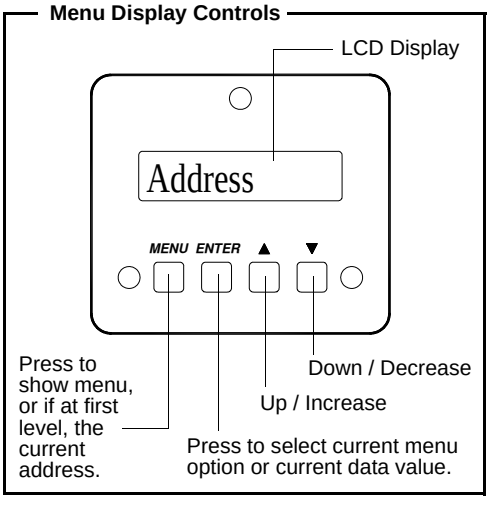
Note: For complete information on all model-specific features, please visit the product Section on the Vari-Lite web site at www.vari-lite.com.

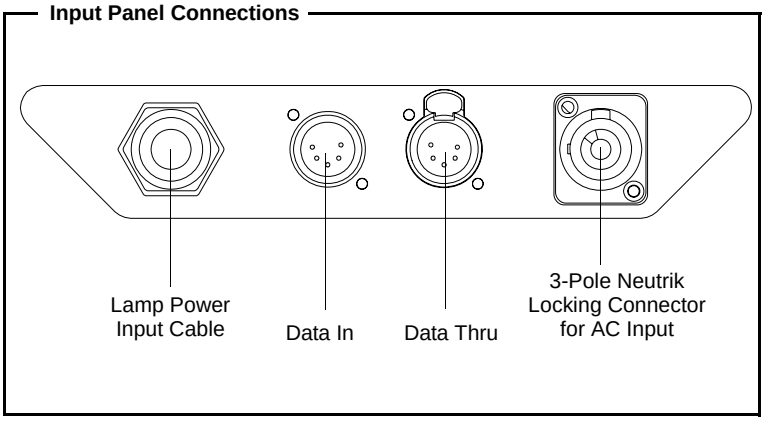
Component Descriptions

External Luminaire Components

The following illustration shows the external luminaire components and controls.


Input Panel
Provides DMX In and Thru, and AC Power connections.
Base
Provides hook mounting holes and safety cable connection.
Yoke Leg (Control)
Contains main control PCB and display PCB.
Lamp Power Input Cable
Yoke Leg (Power)
Contains power supply, and ignitor board (arc units) or dimmer (dimmer units).
Backcap Assembly
Provides access to lamp for replacement and provides controls for beam adjustment.
Menu Display
Used to input manual commands, program, test, set defaults and access internal status information.
Accessory Frame Holder
Provides frame for optional silks, frosts, color. correction or top hats. See detail...
Head Assembly
Houses color, gobo, dimmer, strobe, and optional shutter or iris mechanisms.
Latch
Gel, Silk or Frost
Accepts frames or top hats
Accessory Frame
Accessory Frame Holder
Beam Adjustment Controls
Beam Adjust Screws *
* Do not remove or use to access lamp.


Menu Display Controls
LCD Display
Address
MENU ENTER ▲ ▼
Press to show menu, or if at first level, the current address.
Up / Increase
Down / Decrease
Press to select current menu option or current data value.

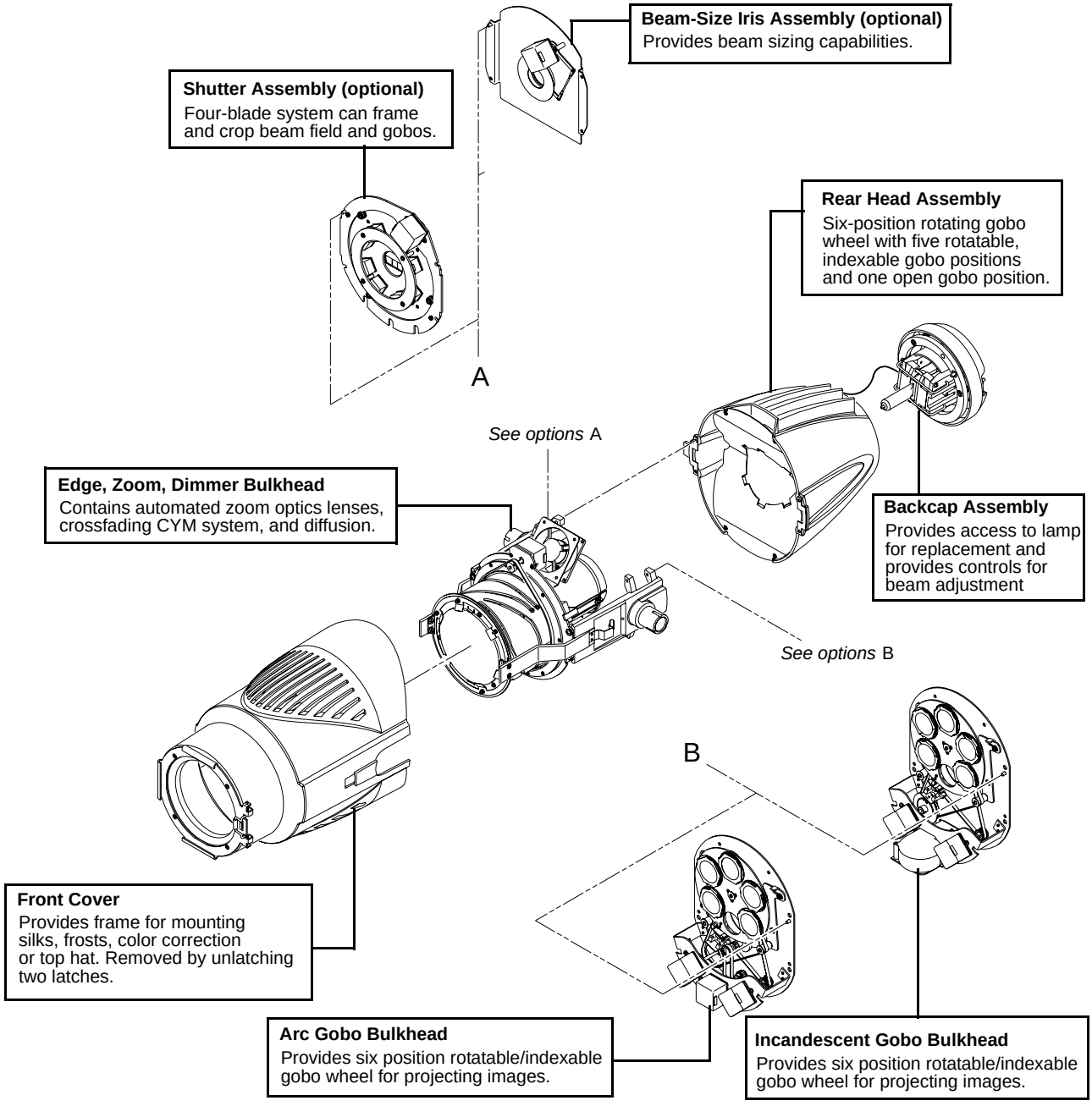


Luminaire Internal Head Components

The following illustration shows the major sub-assemblies that are located in the luminaire head assembly.

A **options** - Shutter or Beam-size Iris bulkhead is dependent on model.

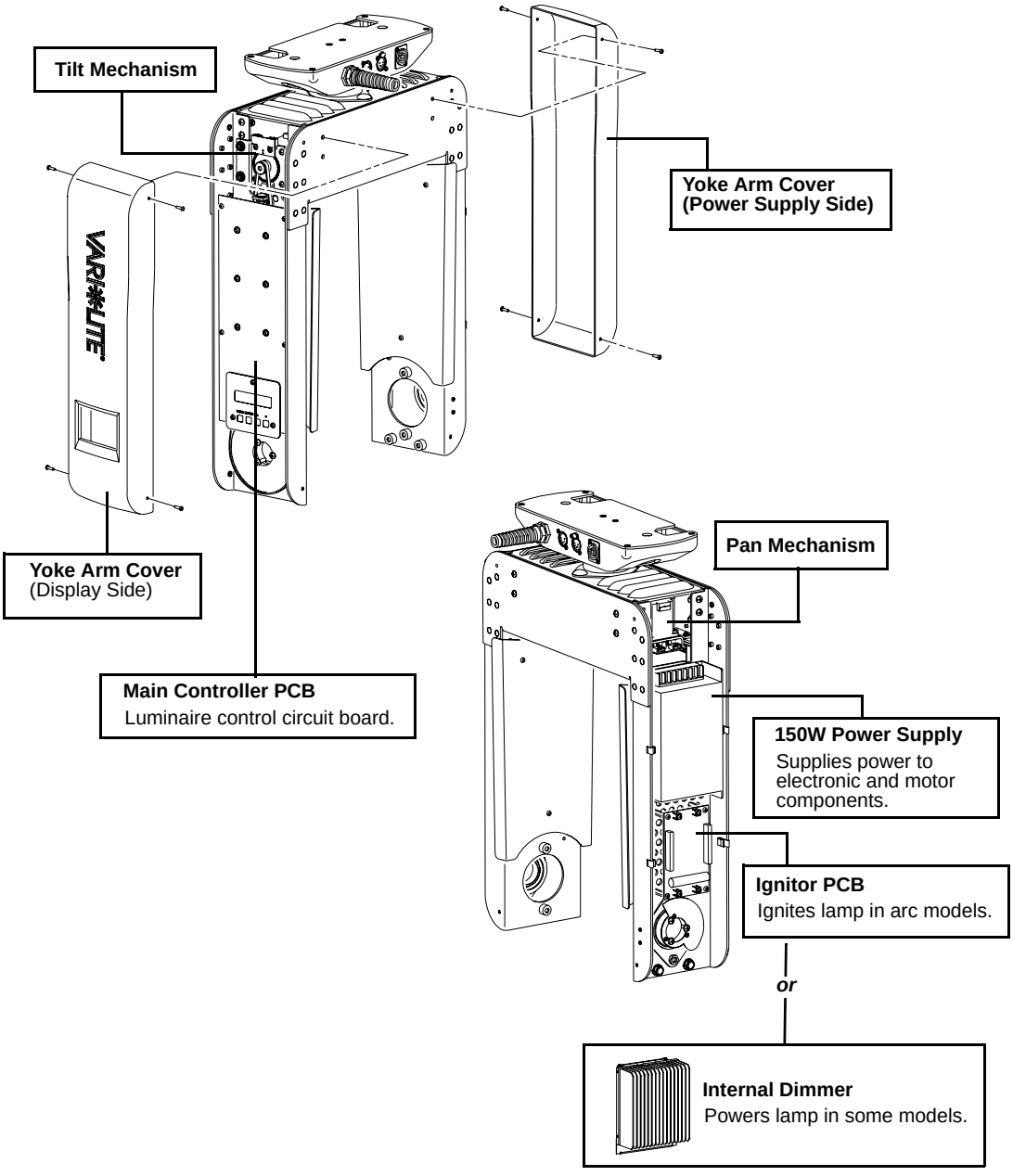
B **options** - Rotating Gobo Bulkhead version is dependent on model.


Beam-Size Iris Assembly (optional)
Provides beam sizing capabilities.
Shutter Assembly (optional)
Four-blade system can frame and crop beam field and gobos.
Rear Head Assembly
Six-position rotating gobo wheel with five rotatable, indexable gobo positions and one open gobo position.
A
See options A
Edge, Zoom, Dimmer Bulkhead
Contains automated zoom optics lenses, crossfading CYM system, and diffusion.
Backcap Assembly
Provides access to lamp for replacement and provides controls for beam adjustment
See options B
B
Front Cover
Provides frame for mounting silks, frosts, color correction or top hat. Removed by unlatching two latches.
Arc Gobo Bulkhead
Provides six position rotatable/indexable gobo wheel for projecting images.
Incandescent Gobo Bulkhead
Provides six position rotatable/indexable gobo wheel for projecting images.

Luminaire Internal Yoke Components

The following illustration shows the major sub-assemblies that are located in the luminaire yoke assembly.

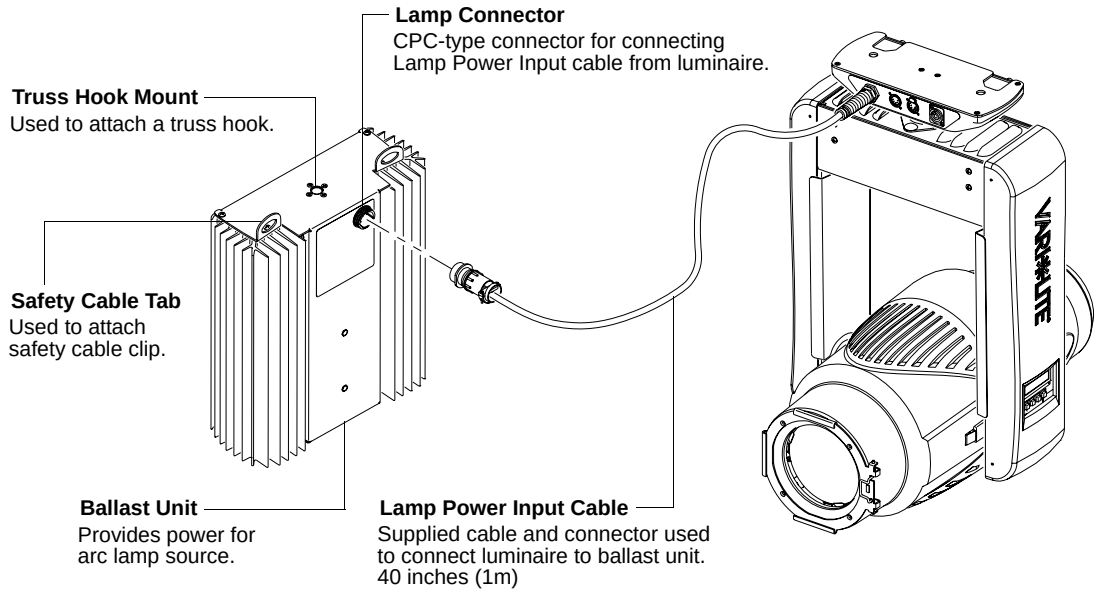
Note: Head assembly not shown for clarity.



Arc Ballast Unit

An external ballast unit is included with VL1100 arc models. In this case, the lamp power input cable is already connectorized for use with this unit.

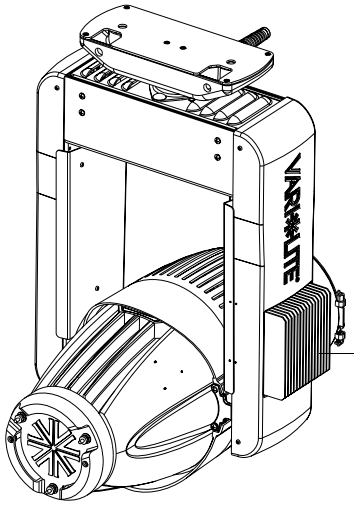
The following illustration shows the external arc ballast components.


Lamp Connector
CPC-type connector for connecting Lamp Power Input cable from luminaire.
Truss Hook Mount
Used to attach a truss hook.
Safety Cable Tab
Used to attach safety cable clip.
Ballast Unit
Provides power for arc lamp source.
Lamp Power Input Cable
Supplied cable and connector used to connect luminaire to ballast unit. 40 inches (1m)

Note: The Lamp Power Input Cable has conductors for lamp power and ballast control. It is not compatible with VARI*LITE Series 300 lamp runs.

Dimmer Model

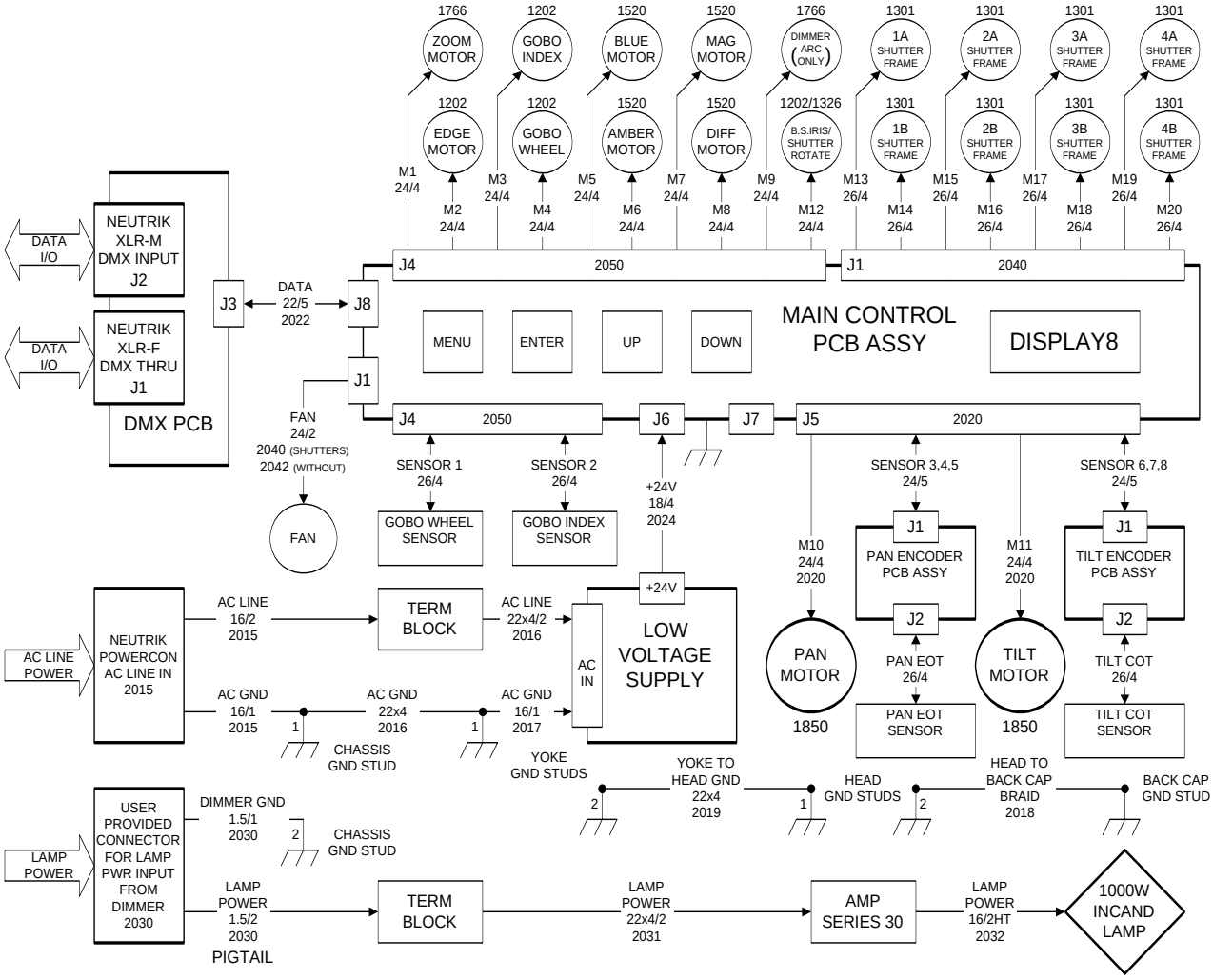
An on-board IGBT dimmer is included with VL1100 incandescent dimmer models. The dimmer heatsink is visible on the power-side yoke leg as shown in this illustration.



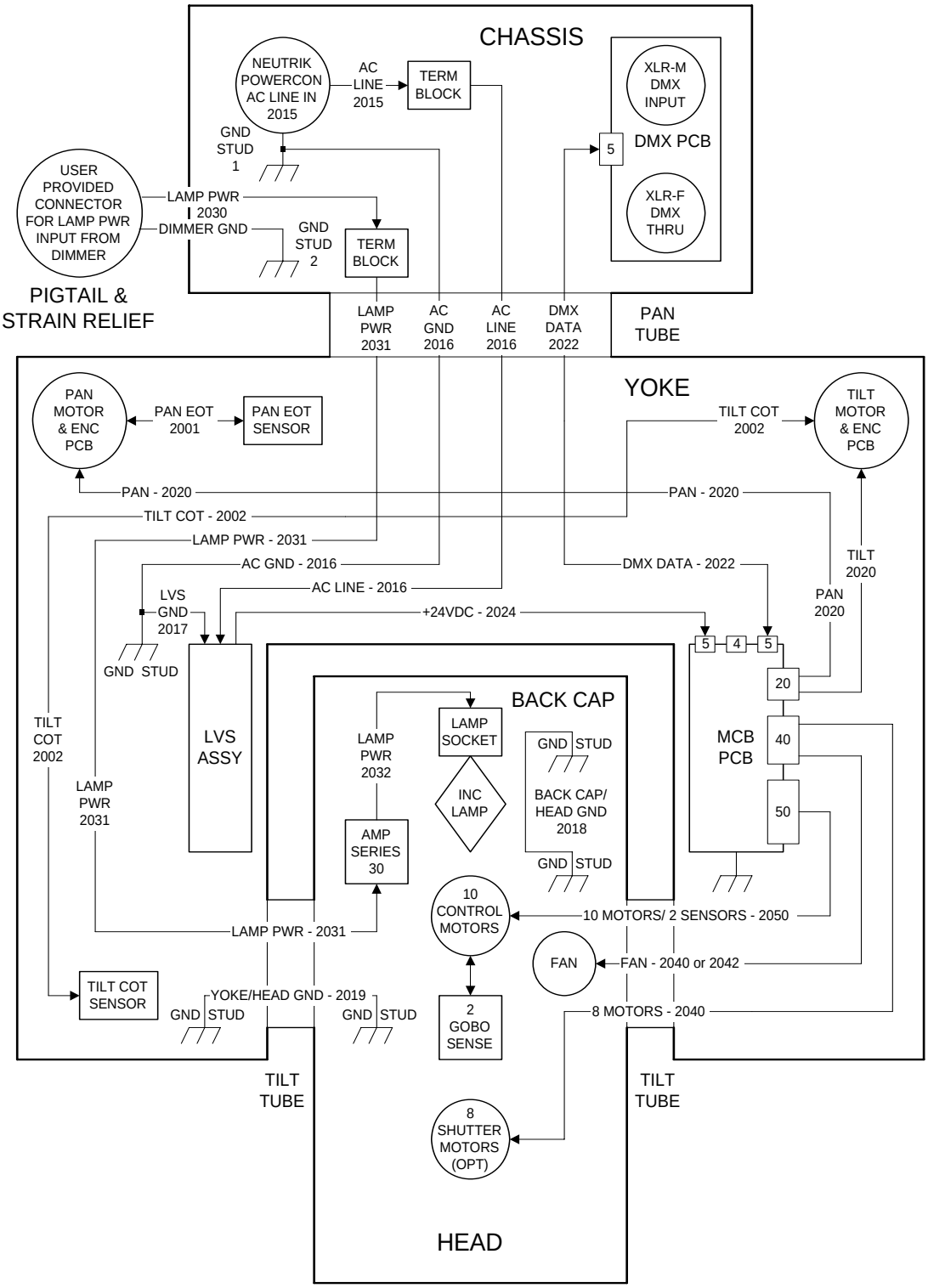
Principles of Operation

VL1100 Incandescent Source Luminaire

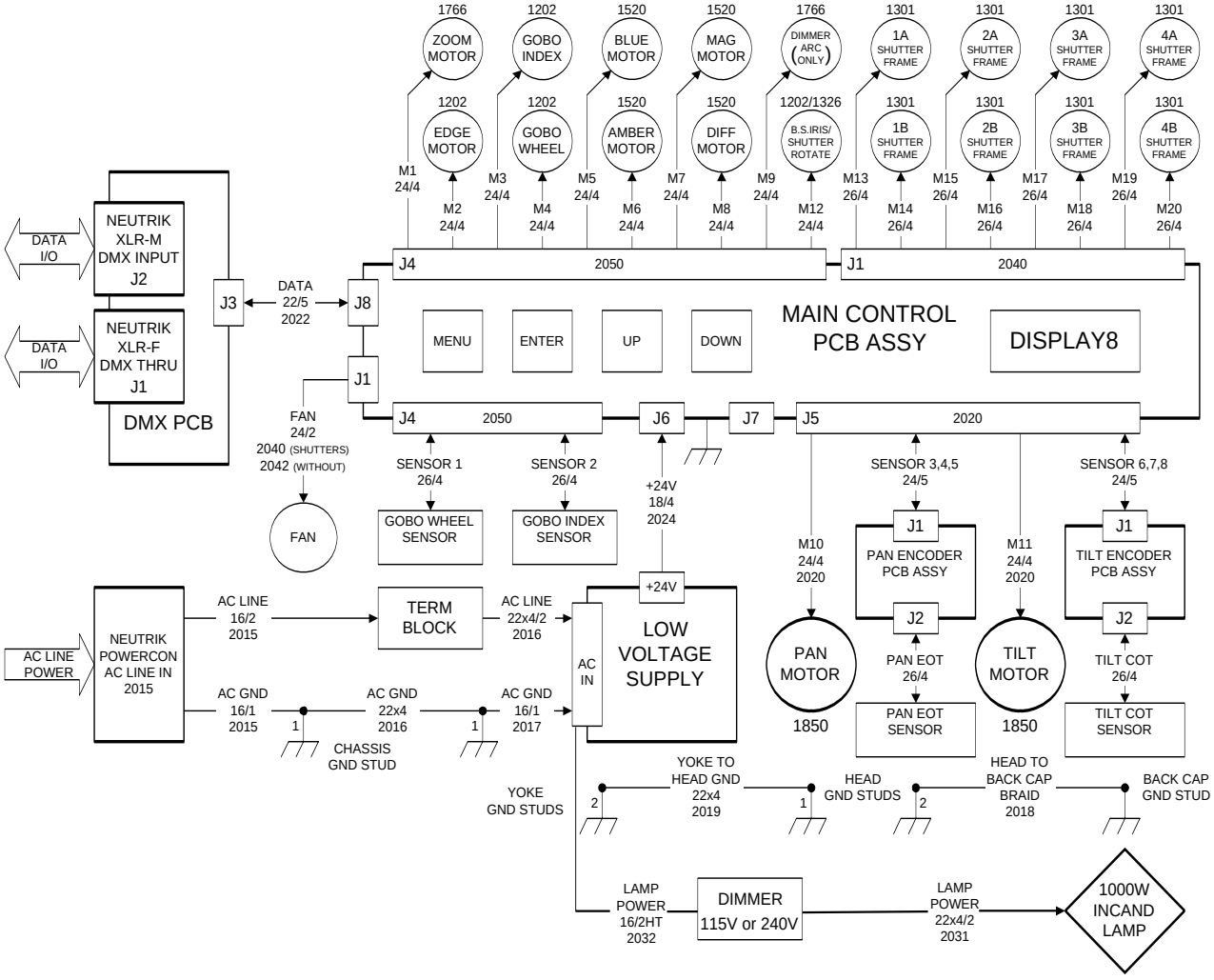
VL1100 Incandescent Block Diagram - Without On-Board IGBT Dimmer



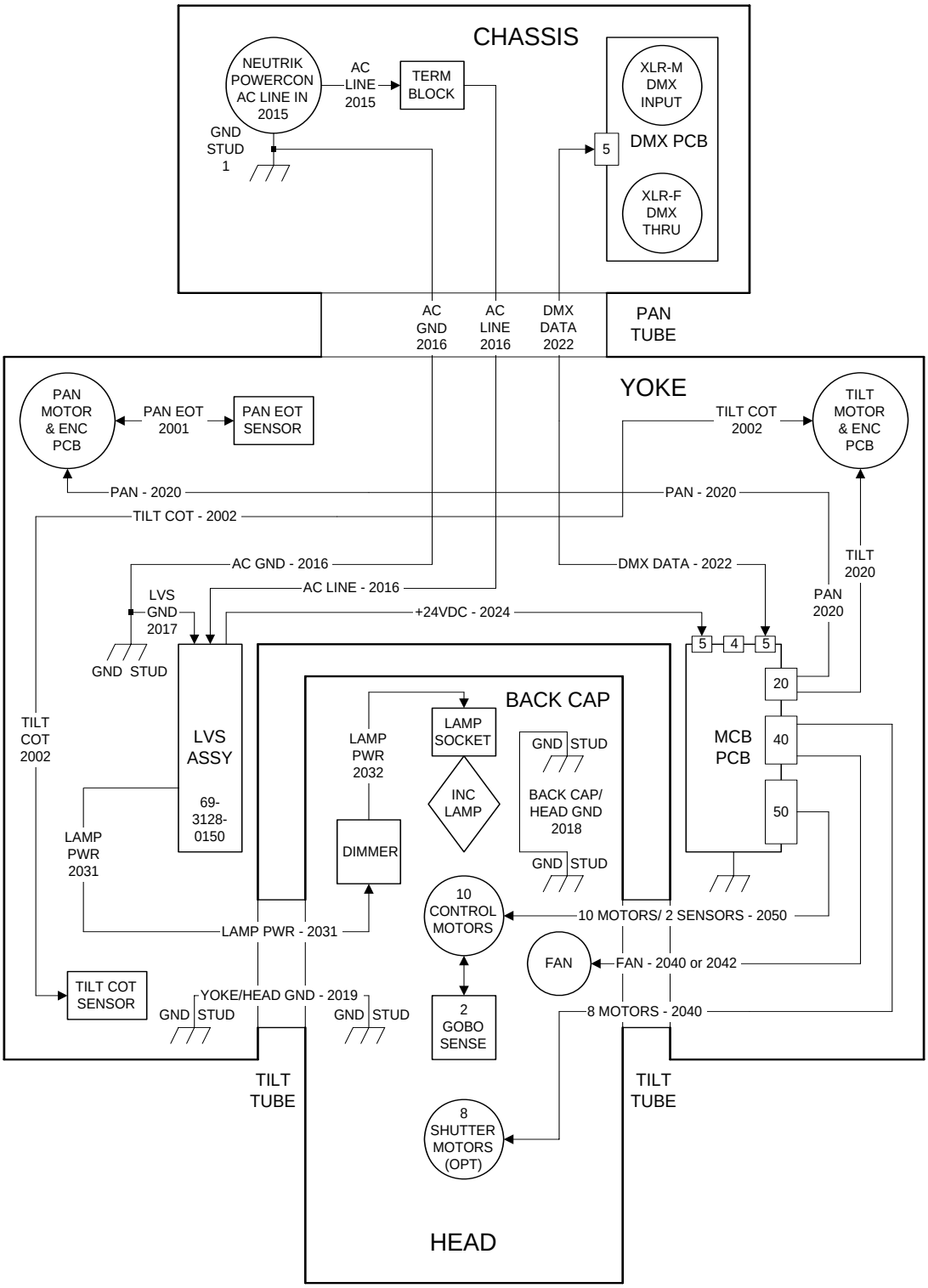
VL1100 Incandescent Cable Routing - Without On-Board IGBT Dimmer



VL1100 Incandescent Block Diagram - With On-Board IGBT Dimmer

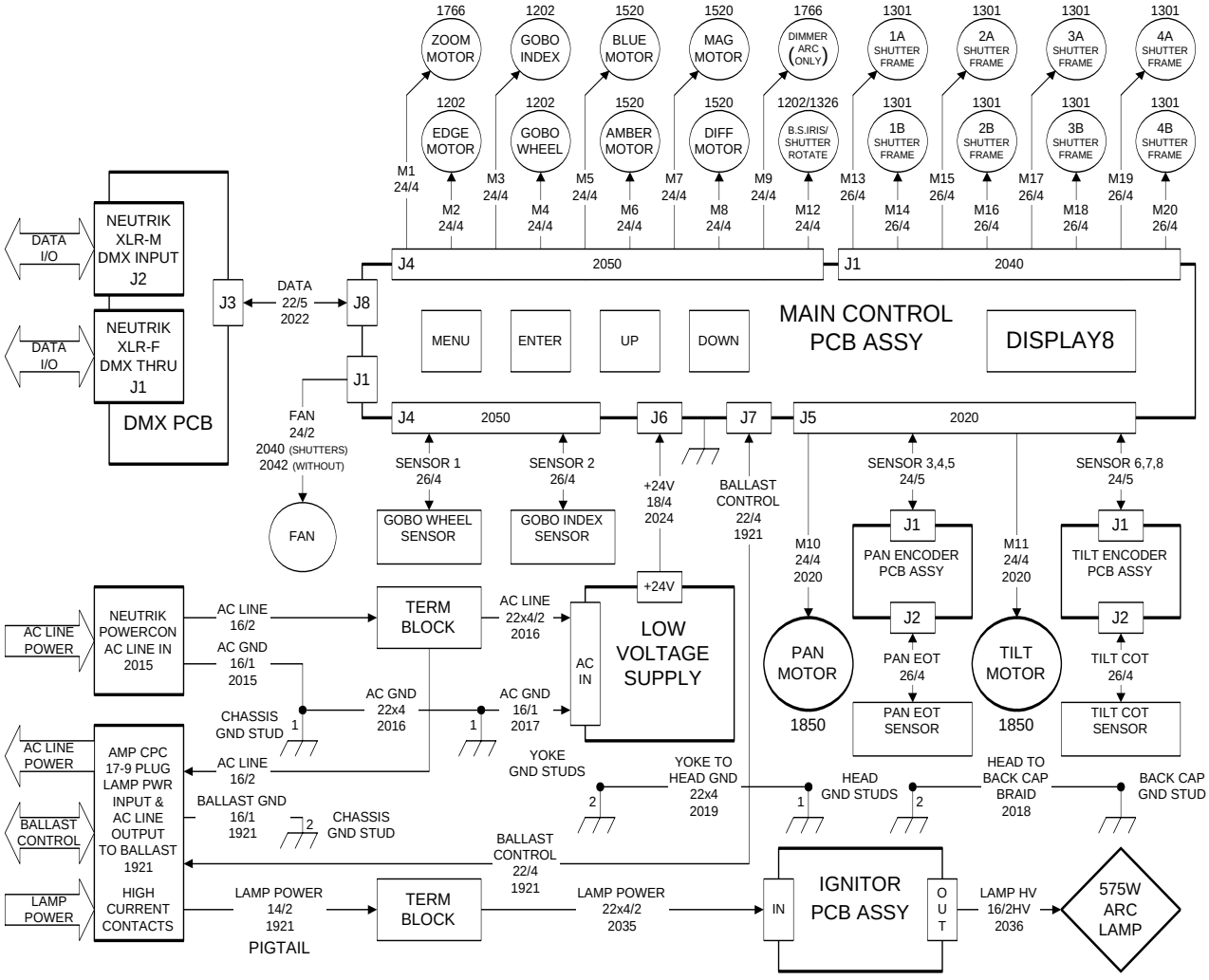


VL1100 Incandescent Cable Routing - With On-Board IGBT Dimmer

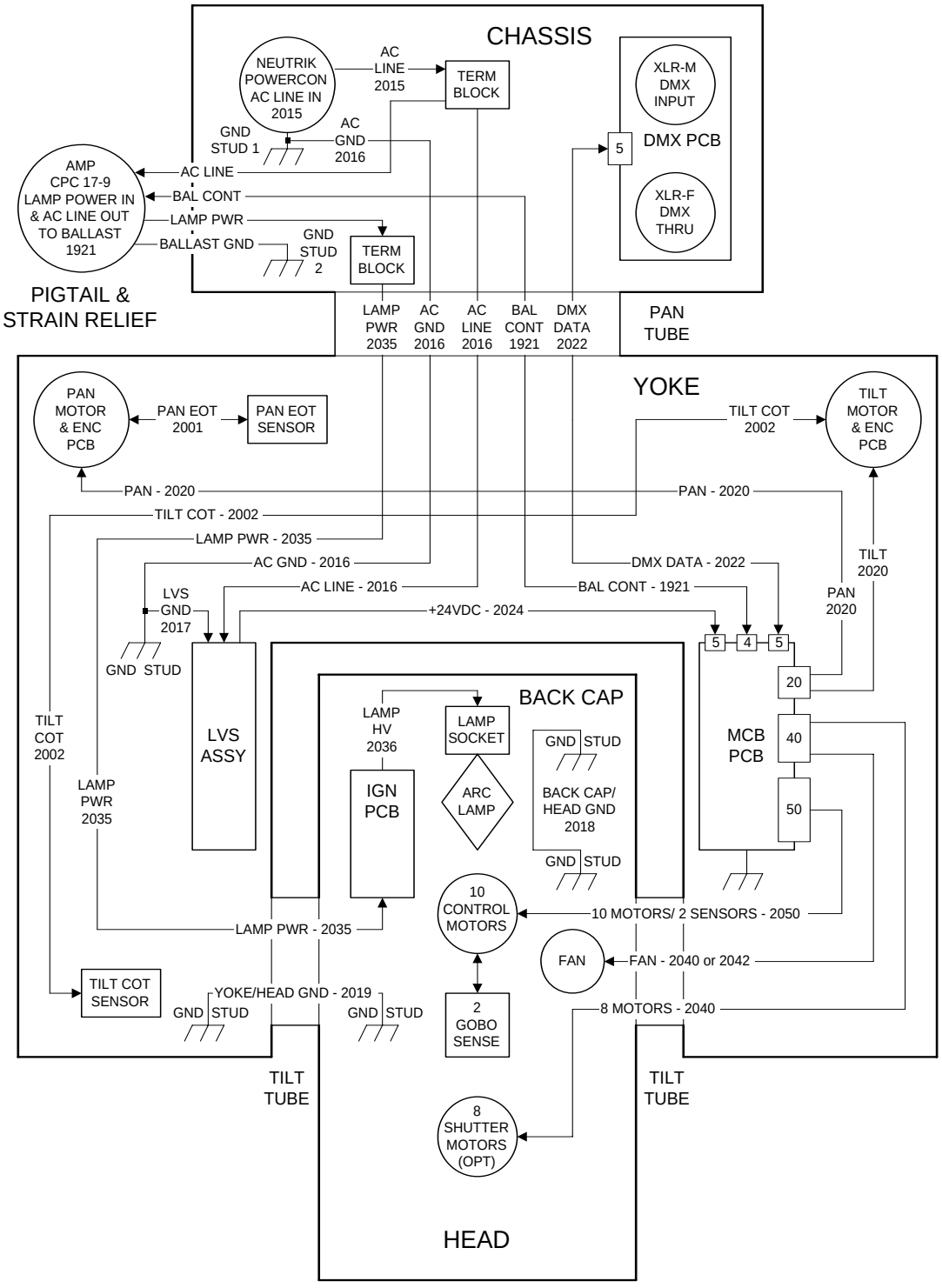


VL1100 Arc Source Luminaire

VL1100 Arc Block Diagram



VL1100 Arc Cable Routing



Notes

CHAPTER 2.

Maintenance

This chapter contains test, service, and standard maintenance procedures.

- **Testing**
- **Maintenance Procedures**

SERVICE

WARNING: All maintenance procedures are to be performed with power removed from the luminaire. Never remove cover or backcap while lamp is in operation.

Testing

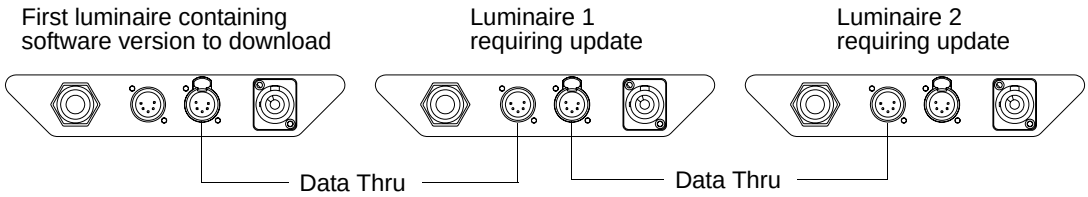
Running Parameter Tests

The luminaire is capable of running self tests by using the TEST menu functions. For detailed instructions regarding the luminaire's self-test function, refer to the VL1100 User's Manual for your luminaire (02.9664.0001).

Note: After 10 seconds of inactivity, the menu display will change to the default state showing the address.

To connect luminaires for simultaneous testing:

Step 1. Connect first luminaire (containing software version to download) to other luminaires (as desired).



Step 2. At master luminaire Menu Display, press [Menu].

Movement Disable

The **Movement** option has been added to the configuration menu. This allows for pan/tilt functions to be disabled so that the luminaire can be placed in any position for testing without movement occurring. In order to regain full control of the luminaire, **Movement** will need to be enabled after testing.

WARNING: Backcap and adjustment knobs will be HOT during lamp operation. Wear gloves and/or use tools to prevent burns.

To run tests:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until **Test** appears. Press [Enter].

Step 3. Use [Up] / [Down] arrows to select a parameter to test. Refer to Table 2-1 on page 19 for a complete list of test parameters.

Step 4. Press [Enter] to run test.

Step 5. Press [Menu] to stop test at any time.

Table 2-1: Self Test Function Chart

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Test *System Test*	**ALL SEQ** *Test All Motors*	**RUN TEST** *Run-Test in Progress*	Press [Menu] to stop tests	
	Pan/Tilt	**RUN TEST** *Run-Test in Progress*		
	Dimmer *(Arc Only)*	**RUN TEST** *Run-Test in Progress*		
	Blue	**RUN TEST** *Run-Test in Progress*		
	Amber	**RUN TEST** *Run-Test in Progress*		
	Magenta	**RUN TEST** *Run-Test in Progress*		
	ColorMix *Blue, Amber, Magenta test*	**RUN TEST** *Run-Test in Progress*		
	Diffusn *Diffusion Test*	**RUN TEST** *Run-Test in Progress*		
	Rot Gobo *Rotating Gobo Test*	**RUN TEST** *Run-Test in Progress*		
	Edge	**RUN TEST** *Run-Test in Progress*		
	Zoom	**RUN TEST** *Run-Test in Progress*		
	Beam *(If Beam-Size Iris Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Shutter *(If Shutter Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Rot Shut *(If Shutter Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Lamp 1 or Lamp 2 *Disables Pan/Tilt and executes Home position.*	**RUN TEST** *Run-Test in Progress*		
	Encoder *Encoders*	**Pan** *Pan Encoder*	**XXXX** *Data*	
		Tilt *Tilt Encoder*	**XXXX** *Data*	
	Sensor *Sensors*	**Pan** *COT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		Tilt *COT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		Rot Gobo *Gobo Select EOT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		GoboIndx *Gobo Index EOT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**

Calibration Sequence

The following is an outline of the luminaire's standard calibration sequence:

Phase 1

- Dimmer
- Colors
- Tilt
- Zoom / Edge

Phase 2

- Gobos
- Pan

Phase 3

- Shutters / Iris

Auto Recalibration

Mechanisms with sensors (Gobo and Index) will check their sensor when at a zero position, if the sensor is not detected within 3 seconds, the mechanism will recalibrate. This applies to all except pan and tilt, pan and tilt are corrected continuously if required by encoders fitted to the motor shaft.

It is possible to recalibrate sections of the luminaire from a console. This allows greater flexibility and speed by only forcing a recalibration on specific mechanisms

Partial recalibration values:

- Hold DMX value 102 for 3 seconds then 0 recalls color: CYM, Frost, and Dimmer
- Hold DMX value 114 for 3 seconds then 0 recalls gobos: Gobo Wheels, Index, and Dimmer
- Hold DMX value 128 for 3 seconds then 0 recalls lenses: Edge, Zoom or Dimmer
- Hold DMX value 140 for 3 seconds then 0 recalls Dimmer and Shutter or Iris (as equipped)

Sensor Testing

Mechanisms within the VL1100 luminaire that are equipped with a sensor have an optical sensor. The VL1100 master control board (MCB) has labeled test points for reading DC voltages at each sensor. Testing is best performed with a digital voltmeter for sensor readings or an oscilloscope for pan/tilt encoder readings. The values can be used to determine whether a circuit is opening correctly or for further troubleshooting.

Guidelines:

- The values will change depending on whether the sensor reading is Open or Closed.
- As a general rule, if a change occurs from 5 volts to 0 volts or visa versa, then it is working.
- An Open reading occurs when the sensor is not aligned - tab not at sensor (typically a non-zero DMX value).
- A Closed reading occurs when the sensor is aligned - tab in or at sensor (typically a zero DMX value).
- Optical sensors read high when the sensor is Closed.
- High value - 5 volts (typically 4.9 volts).
- Low value - 0 volts (or up to approximately 0.2 volts).
- Notes regarding specific mechanisms:
- The gobo wheel reads high when the tab is in the sensor.
- The gobo index/rotation reads low when the slot is in the sensor.

- Pan and tilt sensors read high when the tab is in the sensor. The mechanism calibrates to the edge and its tab covers 50% of travel. Pan and tilt encoders are best read with a scope to read the encoder ticks.

Notes regarding lamp control:

- The douse command applies 5v to the out line. When the start command is given, this drops to 0v. This can be measured at the MCB at the ballast connection. The Out pin of the 5-pin connector should read 0v when the lamp is striking or On (Config>Lamp>Power>On). When the douse command is given (Config>Lamp>Power>Off), the reading should changed to 5v. Likewise, the standby circuit goes to standby when 5v is received on the standby line. Equally, if 5v is applied to the standby line, the lamp will go into standby mode, and if 5v is applied to the Out line, the lamp will douse.

Maintenance Procedures

Lamp Replacement (Incandescent Model)

Parts:

1000 WATT INCANDESCENT LAMP, 100 VAC (71.2552.0100) - TS/TI
1000 WATT INCANDESCENT LAMP, 100 VAC (71.2554.0100) - TS/TI
1000 WATT INCANDESCENT LAMP, 115 VAC (71.2552.0115) - TS/TI
1000 WATT INCANDESCENT LAMP, 115 VAC (71.2554.0115) - TS/TI
1000 WATT INCANDESCENT LAMP, 230 VAC (71.2552.0230) - TS/TI
1000 WATT INCANDESCENT LAMP, 230 VAC (71.2554.0230) - TS/TI
1000 WATT INCANDESCENT LAMP, 240 VAC (71.2554.0240) - TS/TI

Tools:

#2 Phillips screwdriver, cotton gloves

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To install incandescent lamp:

Step 1. Remove power from luminaire.

Step 2. At backcap, gradually loosen two 10-32x2-3/8" PPSS black screws (**Figure 2-1**) a few turns at a time until backcap is free. (Screws must be alternately loosened to prevent one side from locking up.)

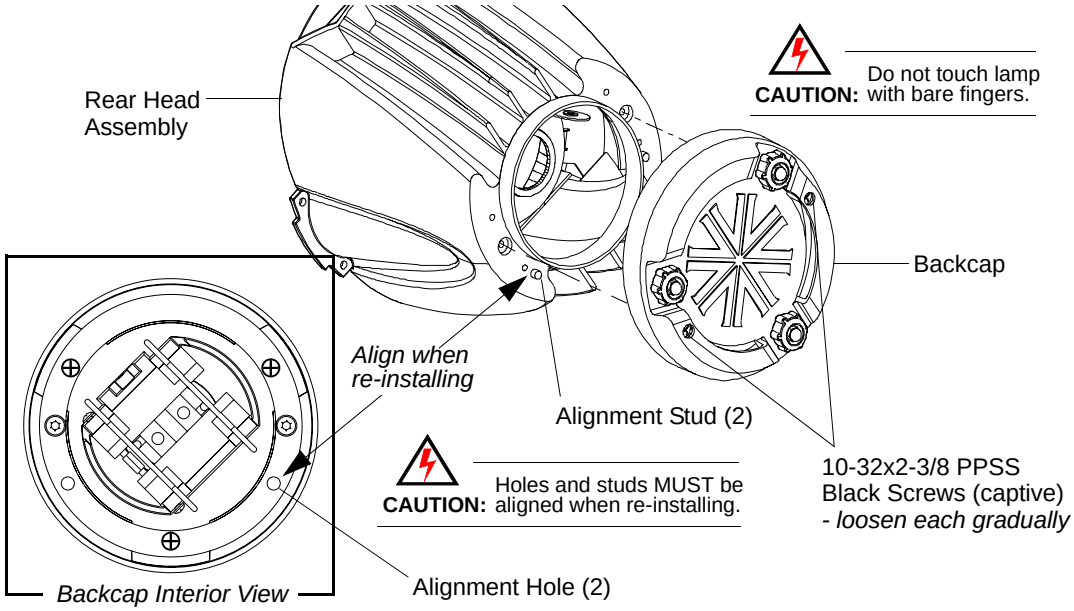

Rear Head Assembly
CAUTION: Do not touch lamp with bare fingers.
Backcap
Align when re-installing
Alignment Stud (2)
CAUTION: Holes and studs MUST be aligned when re-installing.
10-32x2-3/8 PPSS Black Screws (captive) - loosen each gradually
Backcap Interior View
Alignment Hole (2)

Figure 2-1: Removing Incandescent Backcap

Step 3. Carefully pull backcap straight out of rear head assembly. (It will still be attached by lamp wires and tether.)

Step 4. At backcap, flip two bail clamps outward (**Figure 2-2**).

Step 5. Flip two base clamps outward away from socket.

Step 6. Grip lamp by base and firmly install in socket.

Step 7. Close base and bail clamps, locking into place.

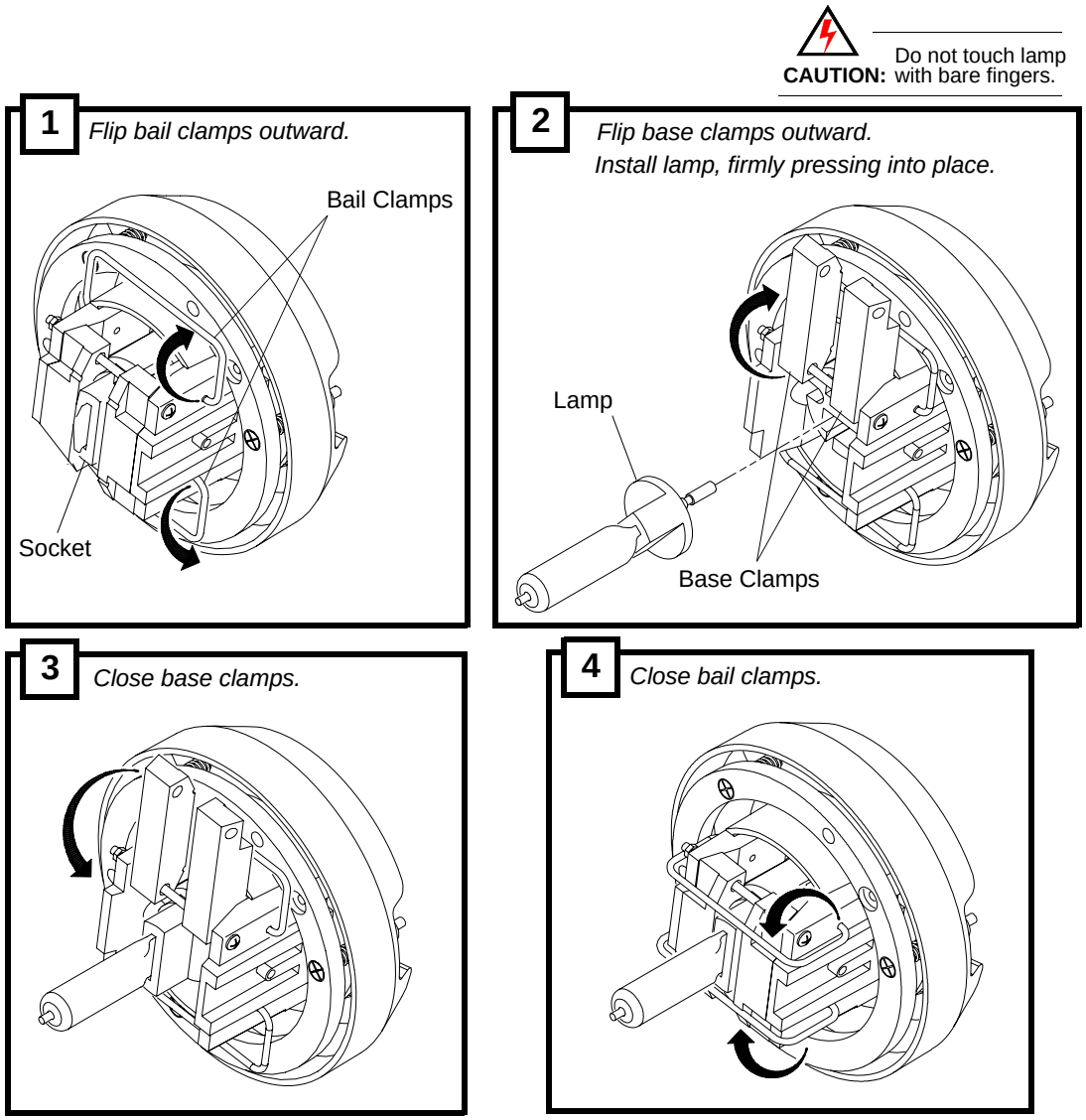


Figure 2-2: Installing Incandescent Lamp in Socket

Step 8. Re-install backcap, ensuring that alignment studs and holes are aligned (**Figure 2-1**).

Step 9. Align lamp. (Refer to "Align Lamp For Maximum Beam Irradiance" on page 27.)

Lamp Replacement (Arc Model)

Parts:

575 WATT ARC LAMP, MSR575HR (71.2528.0575) - AS/AI
575 WATT LONG-LIFE ARC LAMP, MSD575HR (71.2554.0575) - AS/AI

Tools:

#2 Phillips screwdriver, cotton gloves

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To install arc lamp:

Step 1. Remove power from luminaire.

Step 2. At backcap, gradually loosen two 10-32x2-3/8" PPSS black screws (**Figure 2-3**) a few turns at a time until backcap is free. (Screws must be alternately loosened to prevent one side from locking up.)

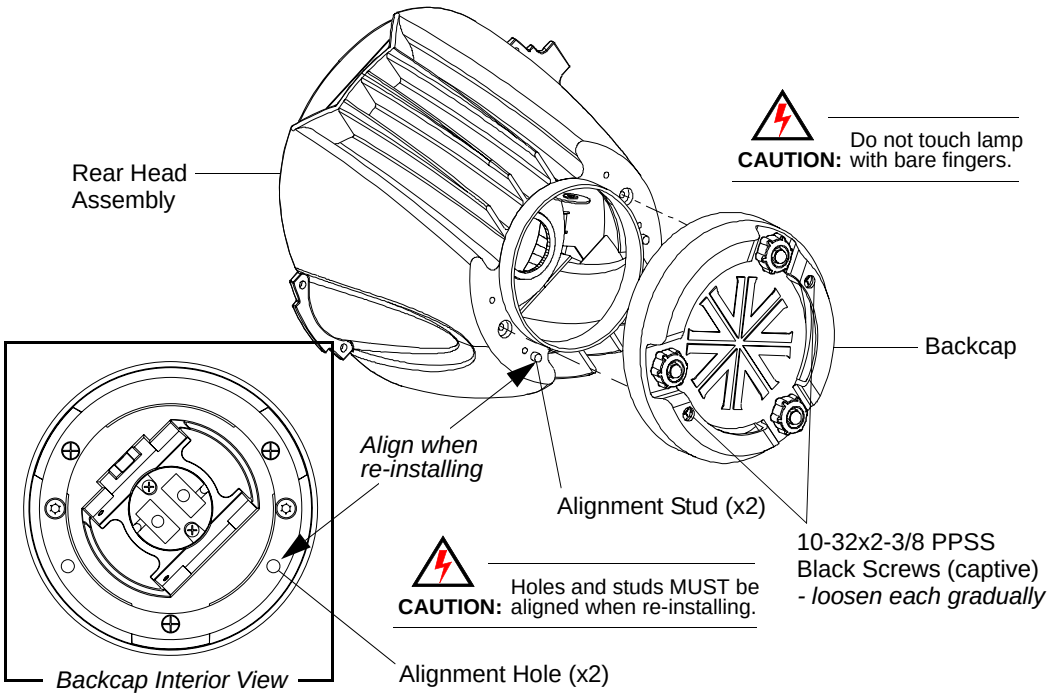

Rear Head Assembly
CAUTION: Do not touch lamp with bare fingers.
Backcap
Align when re-installing
Alignment Stud (x2)
10-32x2-3/8 PPSS Black Screws (captive) - loosen each gradually
CAUTION: Holes and studs MUST be aligned when re-installing.
Alignment Hole (x2)
Backcap Interior View

Figure 2-3: Removing Arc Backcap

Step 3. Grip lamp by base and firmly install in socket (**Figure 2-4**).

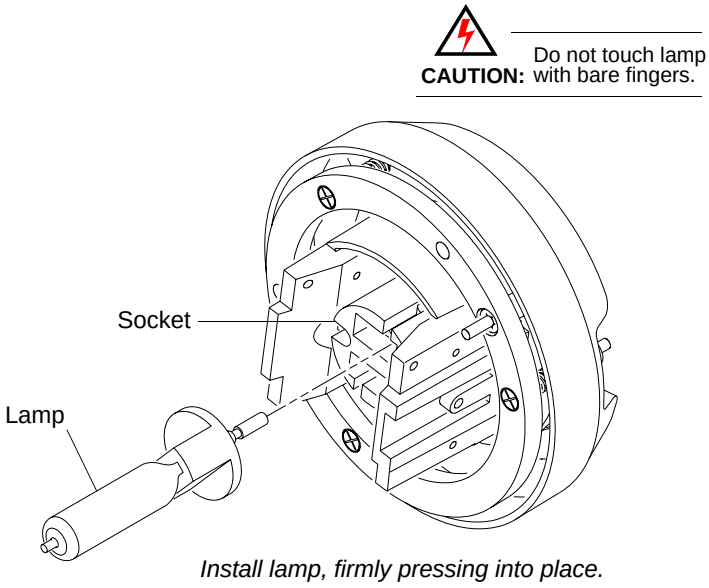


Figure 2-4: Installing Arc Lamp in Socket

Step 4. Re-install backcap, ensuring that alignment studs and holes are aligned (**Figure 2-3**).

Step 5. Align lamp. (Refer to "Align Lamp For Maximum Beam Irradiance" on page 27.)

Align Lamp For Maximum Beam Irradiance

After a new lamp is installed in either the incandescent or arc version of the luminaire, it will be necessary to align the lamp to optimize the beam.

Tools:

None - See Warning

WARNING: Backcap and adjustment knobs will be HOT during lamp operation. Wear gloves and/or use tools to prevent burns.

To align lamp:

Step 1. Set intensity to 100%.

Step 2. Position beam on a white wall at a distance of 10 to 20 feet.

Step 3. Using console or internal luminaire menu controls, set zoom to zero and focus to a hard edge. If installed, be sure that beam-size iris and shutters are open.

Step 4. Using three adjustment knobs, adjust hot spot to center of beam (**Figure 2-5**).

Step 5. Check color uniformity as follows:

a. Position one of the color stages at 30% of maximum. (Cyan or Magenta work best.)

b. Verify that beam color is uniform (if lamp is misaligned, color will be concentrated to one side of beam). If color is not uniform, readjust lamp until color is uniform across entire beam field.

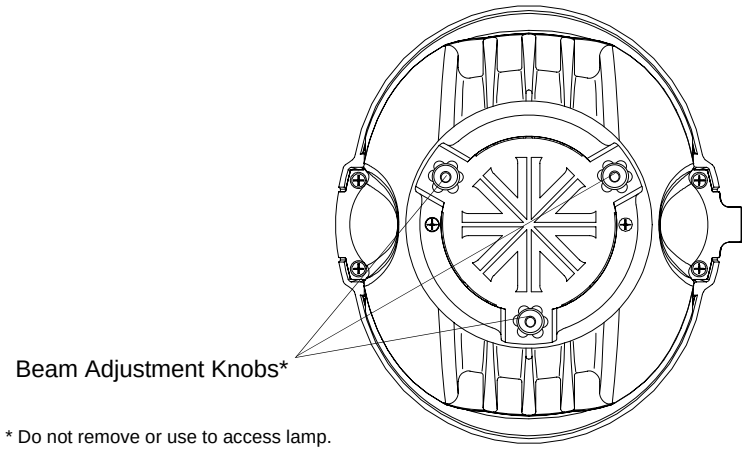


Figure 2-5: Lamp Alignment Screws

Frame or Top Hat Replacement

An accessory frame holder is provided for the addition of a top hat or gel frame with silks, frosts or color correction if required. The frame holder is designed to fit a standard 7.5-inch gel frame or top hat.

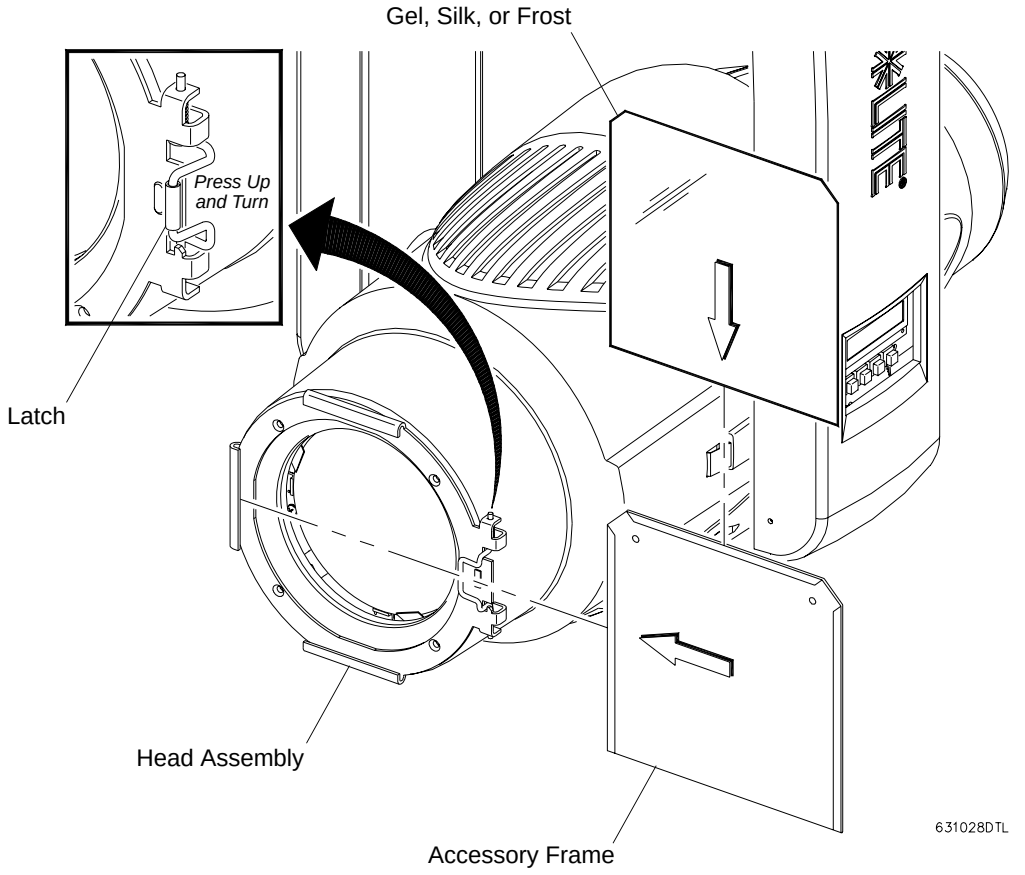
To remove and replace frame or top hat:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. At front lens, press upward on accessory frame latch and turn to open.

Step 3. Remove frame/top hat, if any (**Figure 2-6**).

Step 4. Install frame/top hat and close latch.



NOTE:
The accessory frame is not a Vari-Lite accessory.

Figure 2-6: Installing a Frame or Top Hat

Front Cover Removal

Parts:

ASSY, FRONT COVER

Tools:

#2 Phillips screwdriver

To remove and replace front cover:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. At head assembly, press in front cover latches to release (**Figure 2-7**).

Step 3. Pull cover straight out until stopped by tether.

Step 4. Disconnect tether by removing 8-32x1/2" PFB screw and 8-32 Keps nut as shown.

Step 5. Remove cover.

Step 6. Replace front cover by doing steps 2 through 5 in reverse. *Ensure latches lock into place*.

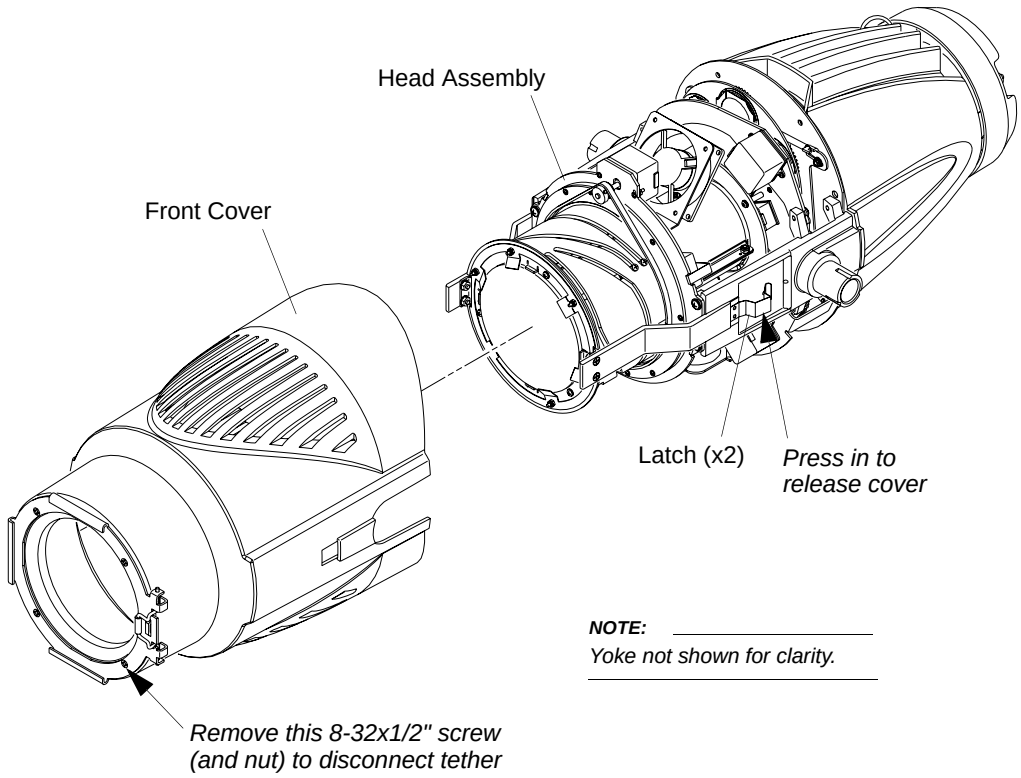


Figure 2-7: Front Cover Removal/Replacement

Rear Head Assembly Removal

This procedure is necessary in order to access some components such as the gobo wheel bulkhead and shutter assembly. Refer to as needed.

Tools:

#2 Phillips long handle screwdriver

To remove rear head assembly:

Step 1. Disconnect luminaire AC input cable from power source.

CAUTION: The rear head assembly is heavy and will remain attached by lamp wires. Place luminaire on tech bench before removing rear assembly.

Step 2. At side rails, remove four 10-32x5/8" PPB screws and #10 split lock washers (**Figure 2-8**). (Side rail spacers will come loose also.)

Step 3. Pull rear head assembly away from front head assembly.

Step 4. Re-install by doing steps 2 and 3 in reverse.

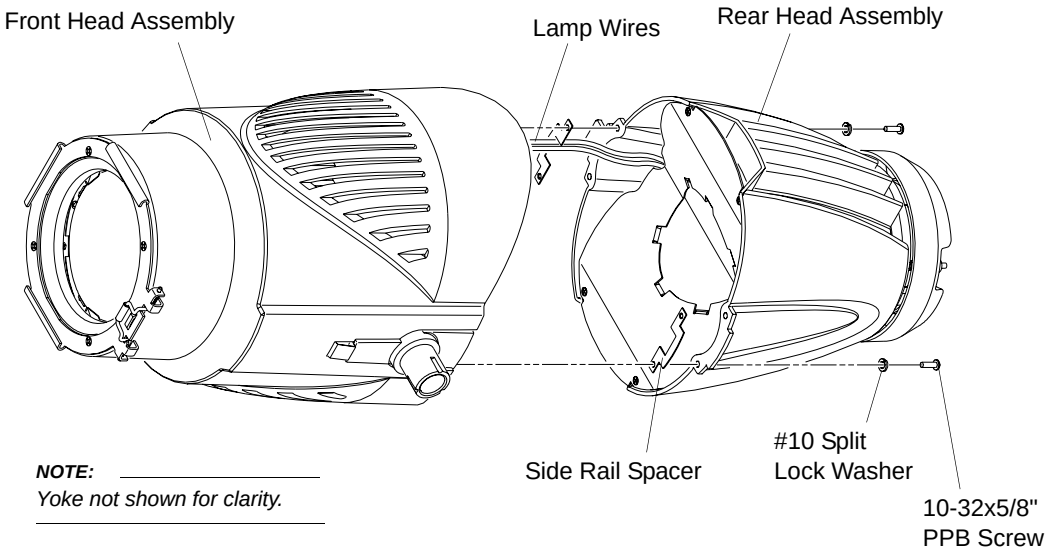


Figure 2-8: Rear Head Assembly Removal and Replacement

Rotating Gobo Replacement

WARNING: Remove power from luminaire before performing maintenance. Gobos may be HOT after operation. Allow to cool before replacing.

WARNING: Users of VARI✻LITE luminaires should not install or use metal gobos. The use of metal gobos in any VARI✻LITE product may damage the luminaire and could void the luminaire's warranty.

To replace a rotating gobo:

Step 1. Remove power from luminaire.

Step 2. At either side of head assembly, press in front cover latch and pull cover straight back until stopped by tether (**Figure 2-7**).

Step 3. Rotate gobo wheel until required gobo position is accessible at finger access cutout (**Figure 2-9**).

Step 4. Rotate gobo gear until open end of carrier is upward.

CAUTION: Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. Clean with glass cleaner and soft cloth if required.

CAUTION: Do not pull metal spring clip carrier back too far or it will not close properly.

Step 5. If applicable, carefully pull current gobo up and out of carrier. *Gobo can be easily scratched on sides of carrier if not careful.*

Step 6. Carefully install new gobo, orienting side marked "This Edge In" toward center of gobo wheel and side marked "Lamp Side" (mirror finish) toward lamp. *Gobo can be easily scratched on sides of carrier if not careful.* Ensure gobo is firmly set in carrier grooves.

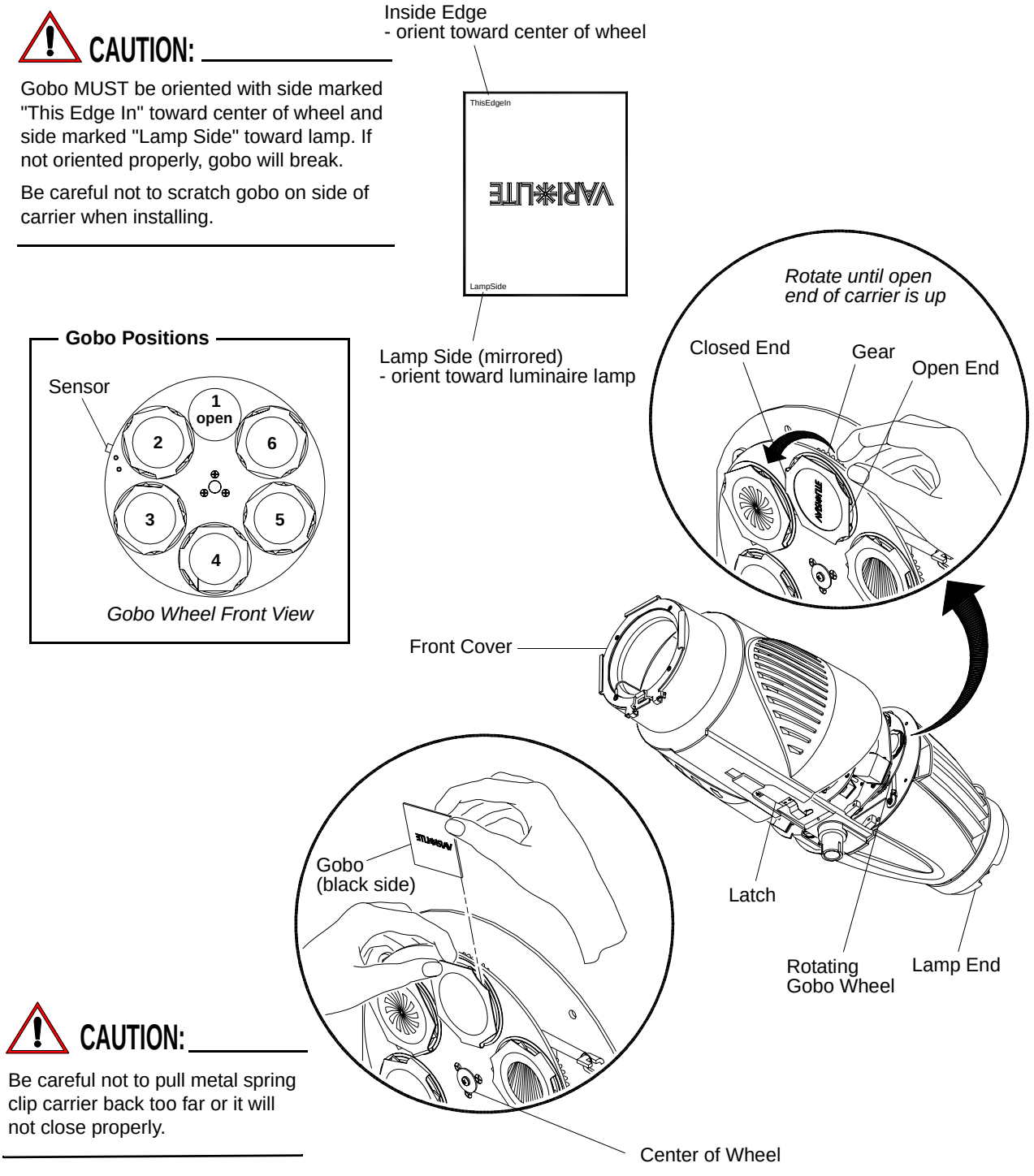
Step 7. Re-install front cover.

Rotating Gobo Replacement (continued)

CAUTION:

Gobo MUST be oriented with side marked "This Edge In" toward center of wheel and side marked "Lamp Side" toward lamp. If not oriented properly, gobo will break.

Be careful not to scratch gobo on side of carrier when installing.



CAUTION:

Be careful not to pull metal spring clip carrier back too far or it will not close properly.

Figure 2-9: Rotating Gobo Replacement/Cleaning

Gobo Index Timing Belt Alignment

The index timing belt (54.9663.1220) must be aligned so that the mechanism "clocks" properly. This belt is installed around the index gear and top gear of the gobo wheel (refer to **Figure 2-11**). The wheel position belt (54.2045.0002) is installed around the wheel position gear and bottom gear of the gobo wheel, and does not require alignment. Each belt is also routed around one pulley as shown in **Figure 2-11**.

Note: The alignment procedure is the same for both arc and incandescent versions.

Use the following procedure to re-align the index timing belt in the event it slips or the gobo wheel is removed from the bulkhead. (This procedure assumes that the wheel has been removed from the bulkhead assembly. If you are simply re-aligning the belt, Step 2 can be skipped.)

To align index timing belt:

Step 1. At large gear, align one of Index Timing Belt's *clock marks* with small groove at inside of Index Gear. The Index Timing Belt contains two *clock marks* (two ridges) as seen in **Figure 2-10**.

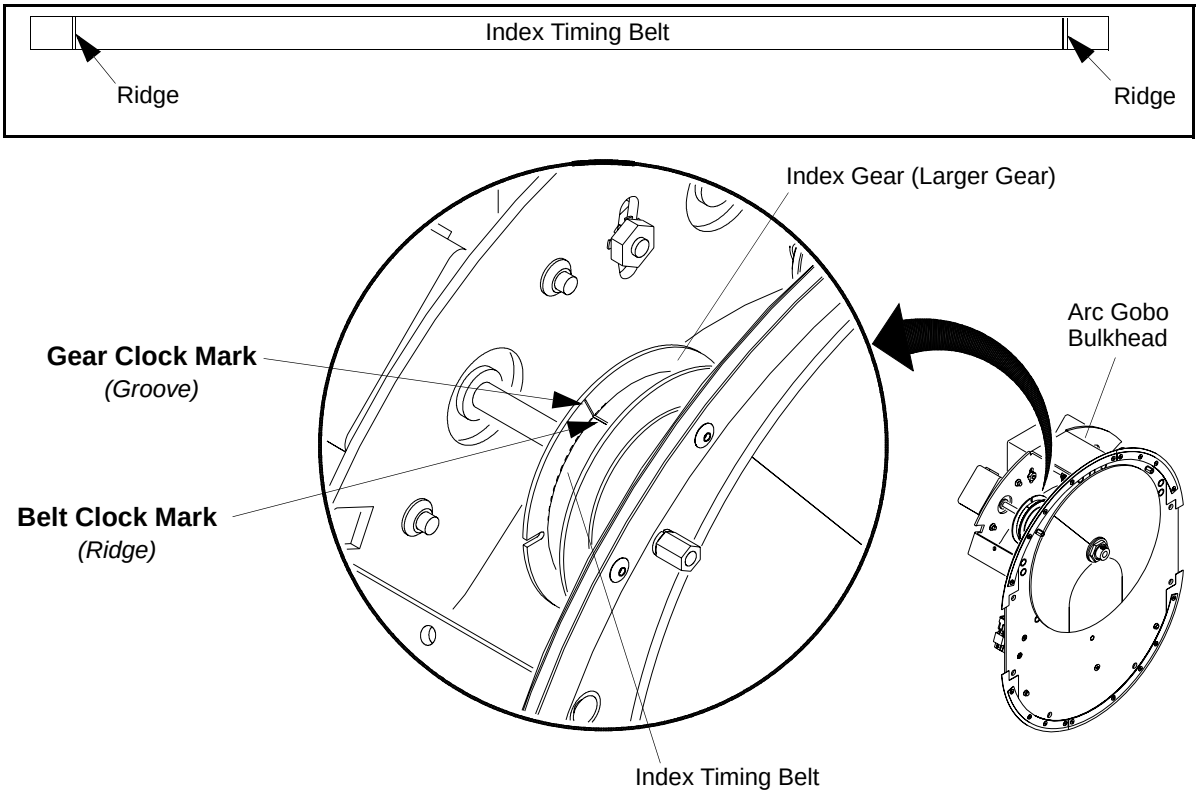


Figure 2-10: Aligning Index Gear Groove and Clock Mark

Step 2. If applicable, lower gobo wheel into place over rotating shaft, fitting wheel position belt around lower gear and index timing belt around top gear. Install 4-40x1/4 " PPZ screw, split lock washer, flat black washer and flat Teflon washer to secure gobo wheel in place. (Belt tension is automatically set by springs of pivot mechanism.)

Step 3. Orient gobo wheel so that notch of gobo wheel gear aligns with small ridge found on index timing belt.

Step 4. Re-check alignment of *clock mark* with groove of index gear. Adjust as necessary until marks are perfectly aligned at both gears.

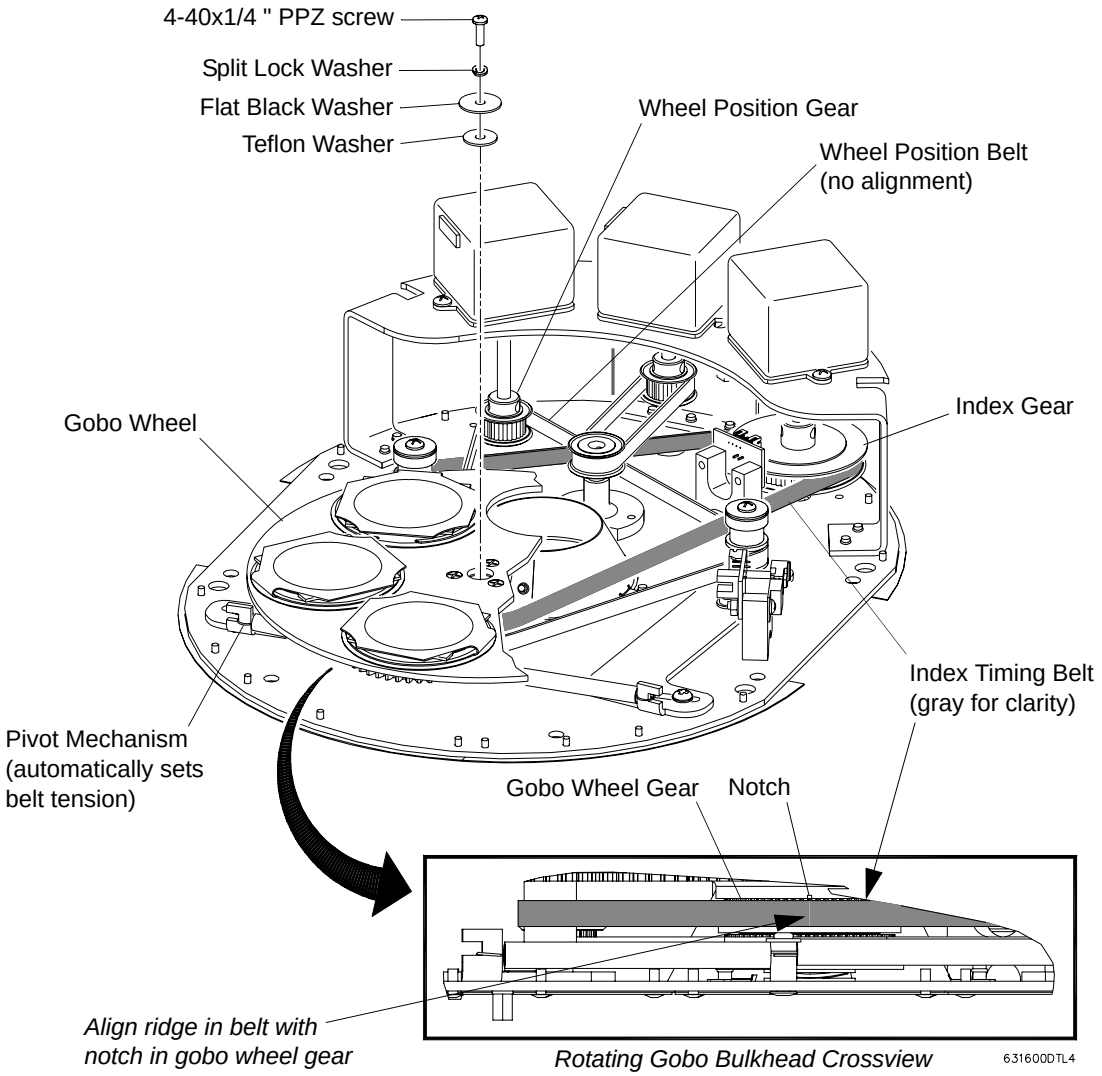


Figure 2-11: Aligning Second Clock Mark

Gobo Wheel Bulkhead Replacement

Parts:

ASSEMBLY, GOBO BULKHEAD INCANDESCENT - TS/TI
ASSEMBLY, GOBO BULKHEAD ARC - AS/AI

Tools:

#2 Phillips long handle screwdriver

To remove and replace gobo wheel bulkhead:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove front cover. Refer to “Front Cover Removal” on page 29.

CAUTION: The rear assembly is heavy and will remain attached by lamp wires. Place luminaire on tech bench before removing rear assembly.

Step 3. At side rails, remove four 10-32x5/8" PPB screws and #10 split lock washers (**Figure 2-12**). (Side rail spacers will come loose also.) Pull rear head assembly away from front head assembly.

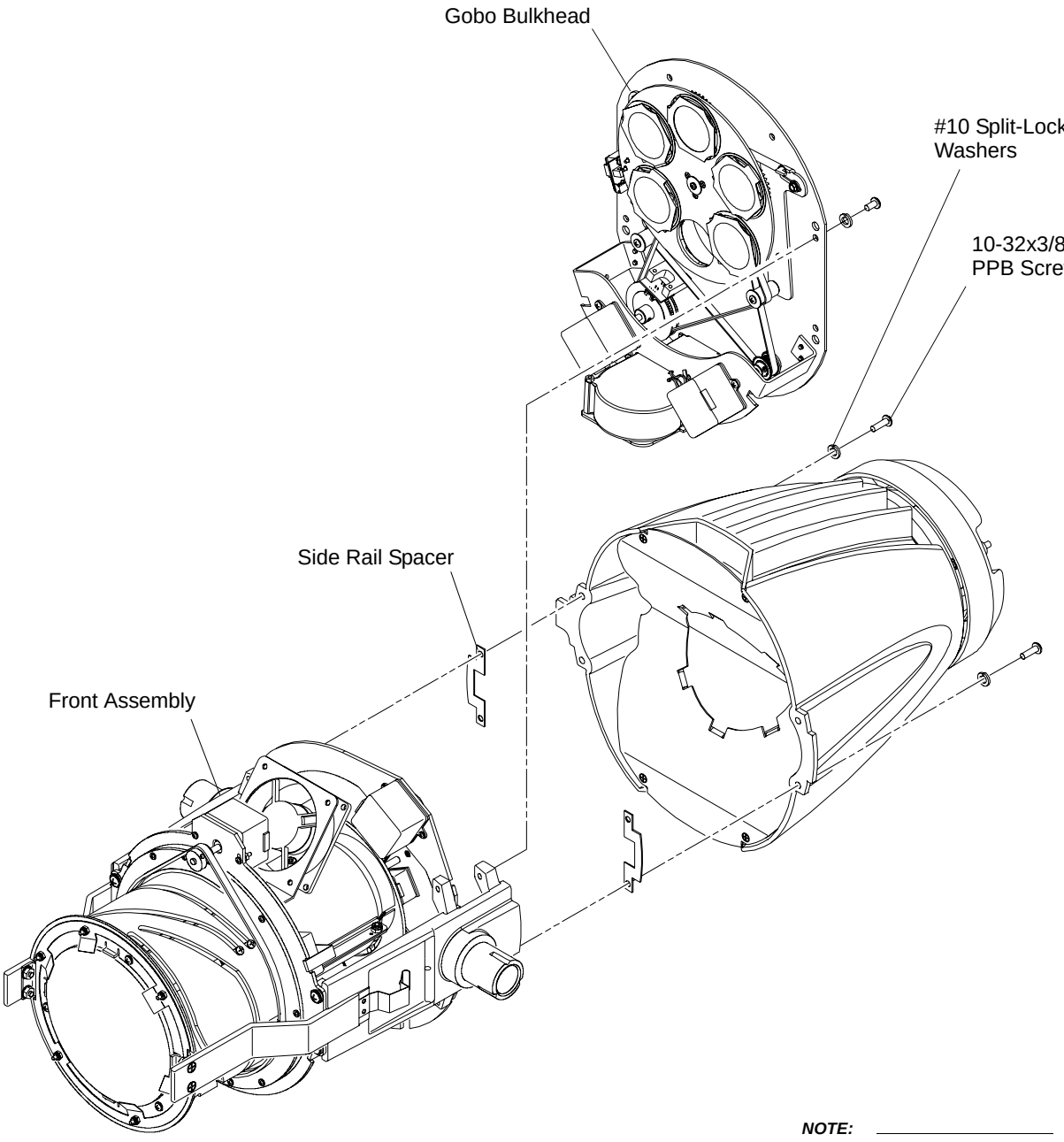
Step 4. At gobo bulkhead, disconnect all motor and sensor wiring.

Step 5. At side rails, remove four 10-32x3/8" PPB screws and #10 split-lock washers.

Step 6. Remove gobo bulkhead.

Step 7. Replace by doing steps 2 through 6 in reverse.

Gobo Wheel Bulkhead Replacement (continued)



NOTE:
Incandescent model gobo bulkhead not shown.

Figure 2-12: Gobo Bulkhead Assembly Replacement

Gobo Gear Planet Alignment

Each gear of the gobo wheel assembly must be aligned so that the gobos will index correctly. Use the following procedure to re-align the gears in the event the gobo wheel is disassembled.

To re-align gobo gears:

Step 1. Place center (sun) gear at starting point so that alignment mark is directly facing Position 1 (open) as shown in **Figure 2-13**.

Step 2. Set Position 6 planet gear as follows:

a. Rotate center gear clockwise until alignment mark is directly facing Position 6.

b. Lift edge of center gear slightly (so that it will not turn), while at same time rotating Position 6 gear until alignment mark is directly across from center gear alignment mark. Lower center gear into place and verify alignment.

Step 3. Set Position 5 planet gear as follows:

a. Rotate center gear clockwise until alignment mark is directly facing Position 5.

b. Lift edge of center gear slightly (so that it will not turn), while at same time rotating Position 5 gear until alignment mark is directly across from center gear alignment mark. Lower center gear into place and verify alignment.

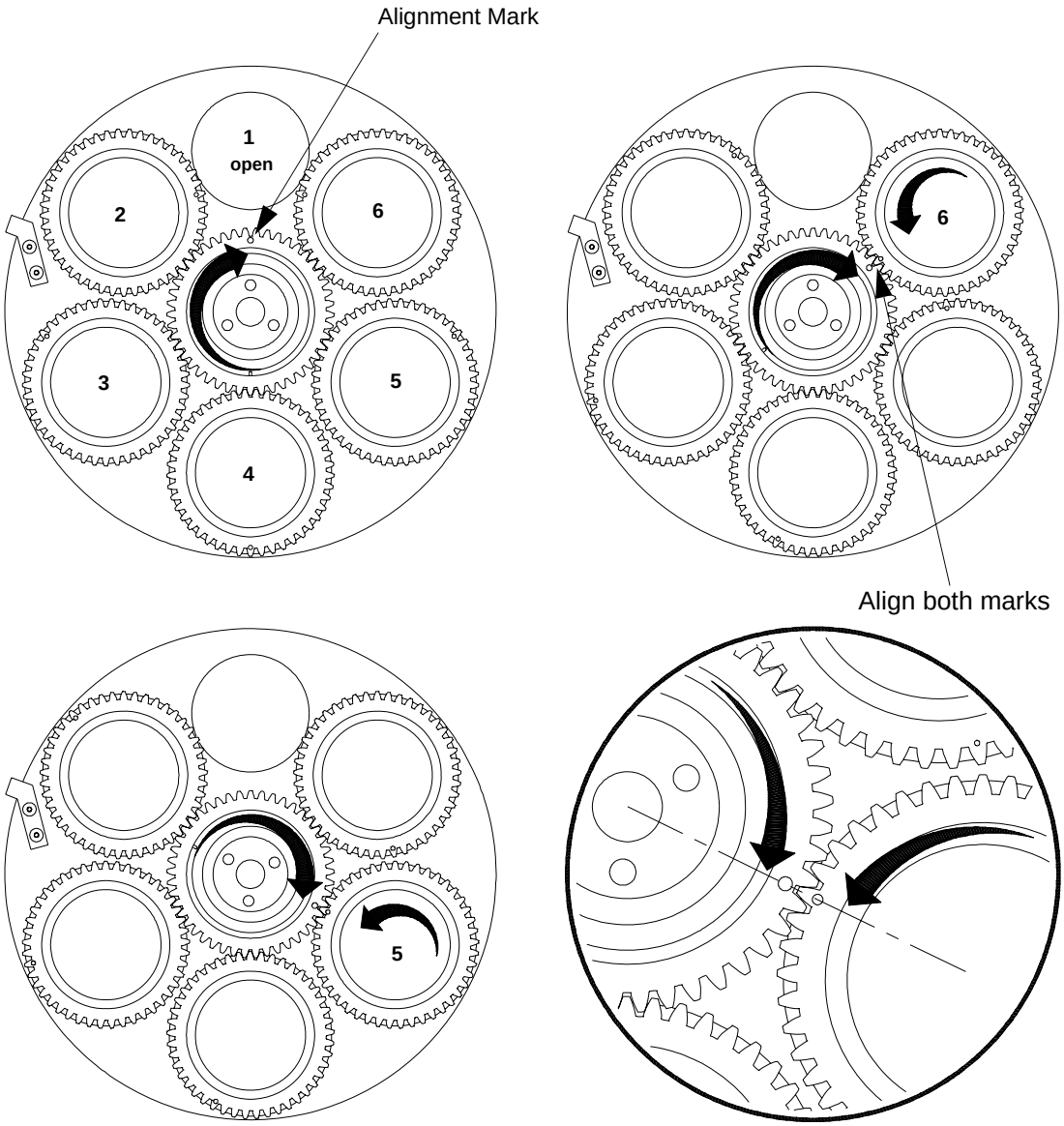
Step 4. Set remaining planet gears by following same procedure. When all gears are aligned, rotate center gear in full rotation to verify alignments. When rotating, marks should align perfectly at each gear as they pass. Adjust as necessary and recheck.

Step 5. Install flange, pulley and three 4-40x5/16" PFB screws to secure gears in place.

Gobo Gear Planet Alignment (continued)

1) Start with center gear alignment mark facing Position 1 (open).

2) Rotate center gear clockwise until alignment mark is directly across from Position 6. Rotate Position 6 gear until marks align.



3) Align remaining gobo gears using the same method.

4) Verify alignment of all marks and adjust as necessary.

Figure 2-13: Aligning Gobo Wheel Gears

Shutter Assembly Replacement

Parts:

ASSEMBLY, SHUTTER 6 ROLLERS

Tools:

#2 Phillips long handle screwdriver+

To remove and replace shutter assembly:

Step 1. Disconnect luminaire AC input cable from power source.

CAUTION: The rear assembly is heavy and will remain attached by lamp wires. Place luminaire on tech bench before removing rear assembly.

Step 2. Remove front cover, rear head assembly and gobo wheel bulkhead. Refer to "Gobo Wheel Bulkhead Replacement" on page 35.

Step 3. Remove yoke leg cover (side with menu display) by removing four 6-32x3/8" PTB screws (**Figure 2-14**).

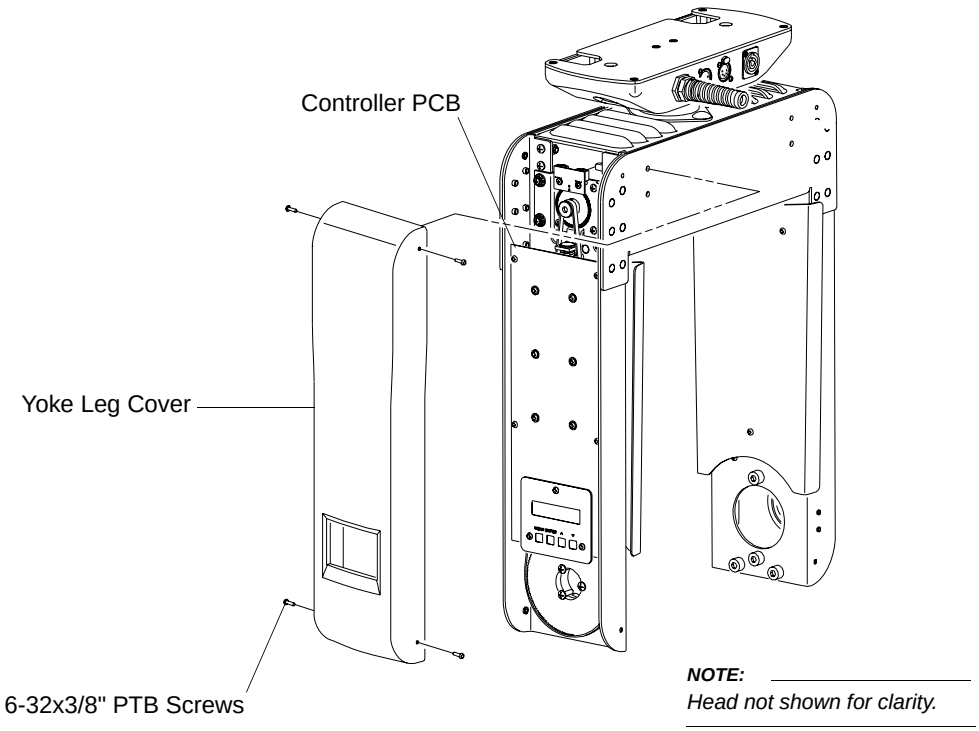


Figure 2-14: Removing Yoke Leg Cover to Access Controller PCB

Step 4. At Controller PCB, disconnect shutter wiring harness at position marked SHUTTERS.

Step 5. Noting placement, cut tie-wraps securing harness to other wires.

Step 6. Feed shutter harness cable out of yoke arm.

Step 7. At side rails, remove four 10-32x3/8" PPB screws and #10 split-lock washers and remove shutter assembly (**Figure 2-15**).

CAUTION: Do not overtighten tie-wraps when re-installing.

Step 8. Replace shutter assembly by doing steps 2 through 7 in reverse.

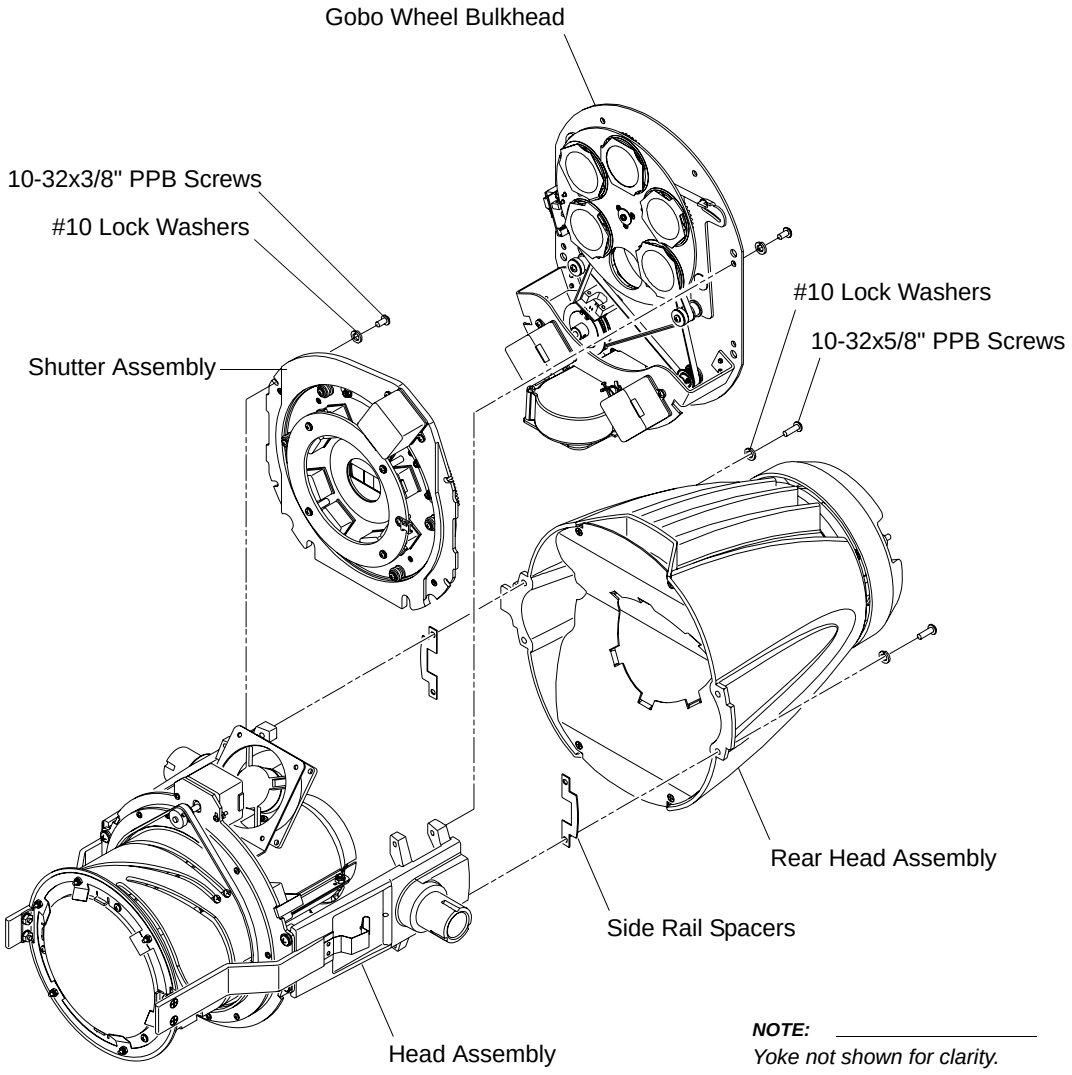


Figure 2-15: Shutter Assembly Replacement

Shutter Blade or Rack Replacement

Parts:

as required:

BLADE, SHUTTER, COATED SIDE A

BLADE, SHUTTER, COATED SIDE B

RACK, SHUTTER

Tools:

#2 Phillips screwdriver

To remove and replace a shutter blade or rack:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove shutter assembly. Refer to "Shutter Assembly Replacement" on page 39.

Step 3. Place shutter assembly on work bench, motor side down. Remove four 6-32x1/4" PFS screws and remove cover plate (**Figure 2-16**).

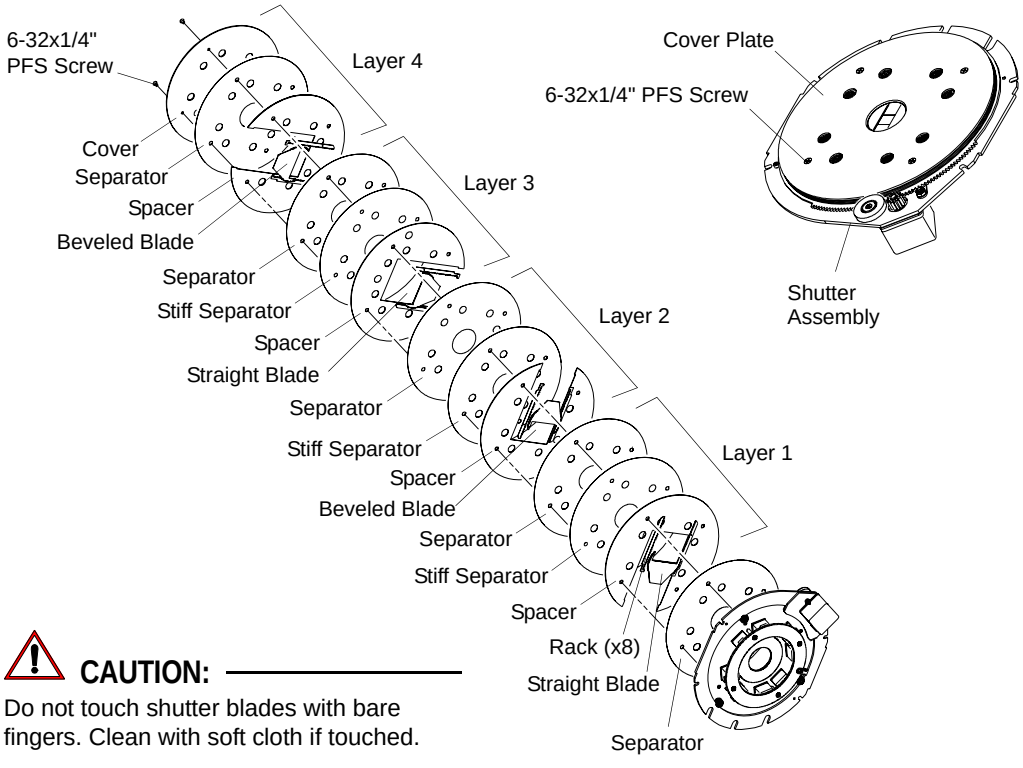


Figure 2-16: Shutter Assembly Breakdown

Step 4. Carefully remove plates and components until blade or rack to be replaced is reached. Install new component(s) as required.

Step 5. Re-assemble shutter's four layers. Ensure that components are oriented and aligned as shown in **Figure 2-17**.

Note: The difference between the two types of shutter blades can be found by examining the main edge. Coated Side A blades (12.9663.1323) are beveled and the Coated Side B blades (12.9663.1324) are not.

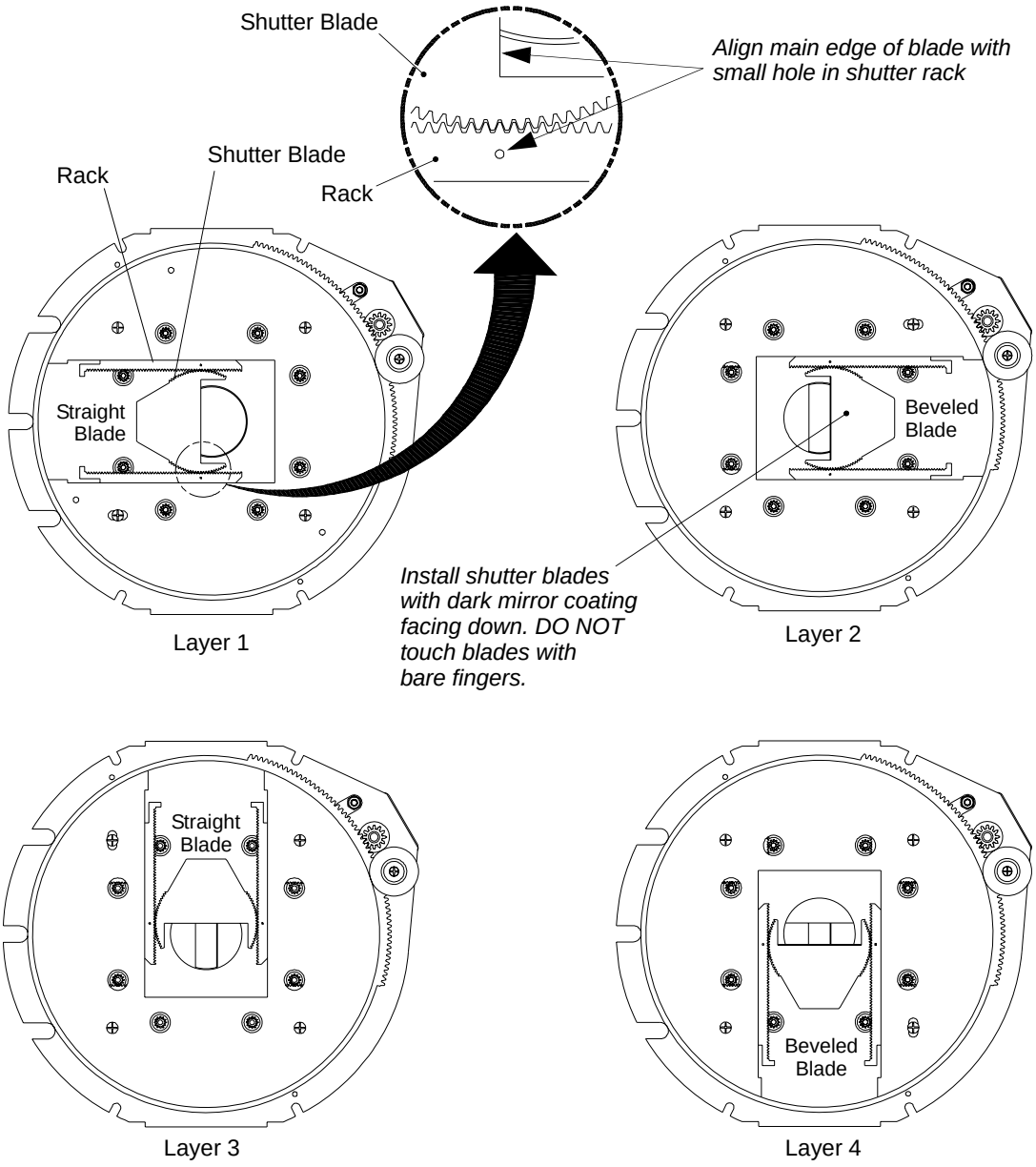


Figure 2-17: Shutter Assembly Layer Orientation

Edge/Zoom/Color Bulkhead Replacement

Parts:

ASSEMBLY, EDGE CONTROL, DIMMER AND COLOR

Tools:

#2 Phillips screwdriver

To remove and replace edge/zoom/color bulkhead:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove front cover. (Refer to "Front Cover Removal" on page 29.)

Step 3. At edge/zoom/color assembly, disconnect wiring harness connections.

Step 4. At side rail, remove four 8-32x1/2" PFB screws, four 10-32X5/8" PPB screws and four #10 lock washers as indicated in **Figure 2-18**.

Step 5. At front, remove four 8-32 Keps nuts and remove assembly. Note location of attached tether.

Step 6. Replace assembly by doing steps 2 through 5 in reverse.

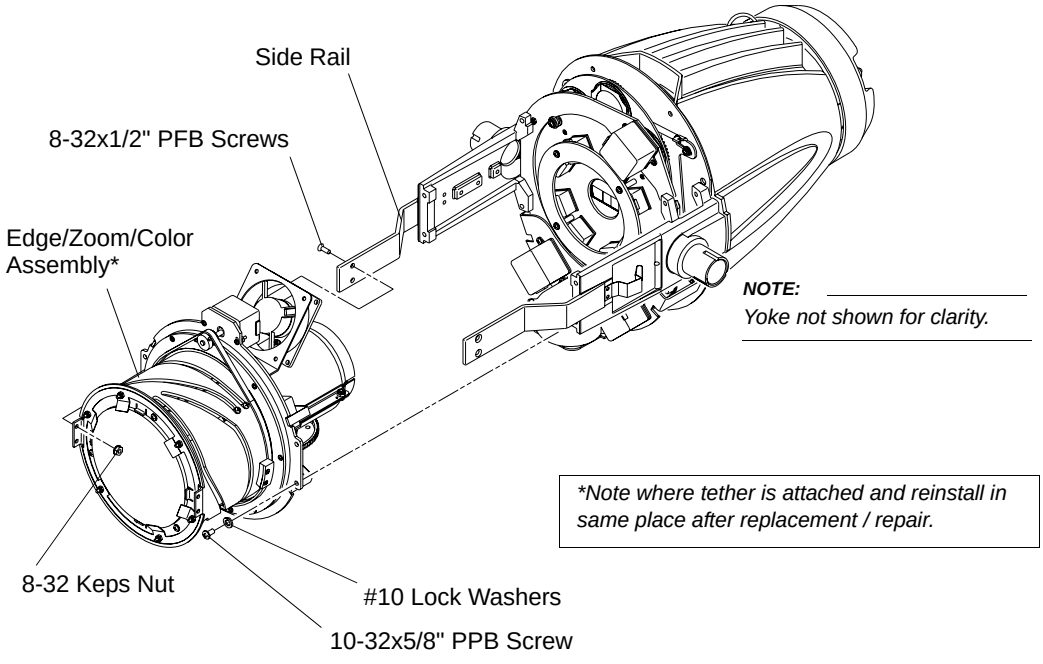

Side Rail
8-32x1/2" PFB Screws
Edge/Zoom/Color Assembly*
NOTE:
Yoke not shown for clarity.
*Note where tether is attached and reinstall in same place after replacement / repair.
8-32 Keps Nut
#10 Lock Washers
10-32x5/8" PPB Screw

Figure 2-18: Edge/Zoom/Color Bulkhead Replacement

Fan/Temp Switch Assembly Replacement

Note: Fan does not operate under normal luminaire operating conditions.

Parts:

CABLE ASSEMBLY, FAN/TEMP SWITCH

Tools:

#2 Phillips screwdriver

To remove and replace fan/temp switch assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove edge/dimmer/color bulkhead. Refer to "Edge/Zoom/Color Bulkhead Replacement" on page 43.

Step 3. At fan, remove four 6-32 x 3/8 " PPSS black screws and 6-32 nylon insert hex nuts and remove fan/temp switch assembly (**Figure 2-19**).

Step 4. Replace assembly by doing steps 2 and 3 in reverse.

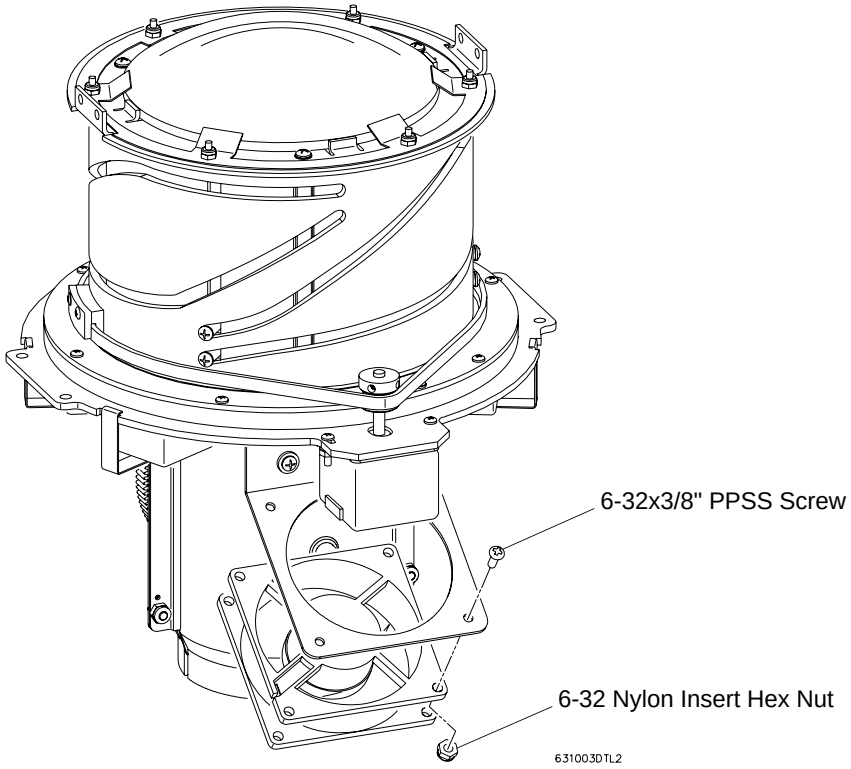


Figure 2-19: Fan/Temp Switch Assembly Replacement

Beam-Size Iris Assembly Replacement

Note: This procedure not applicable to all units.

Parts:

ASSEMBLY, IRIS

Tools:

#2 Phillips screwdriver

To remove and replace beam-size iris assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove front cover, rear head assembly, and gobo wheel bulkhead. Refer to procedures "Front Cover Removal" on page 29, "Rear Head Assembly Removal" on page 30 and "Gobo Wheel Bulkhead Replacement" on page 35.

Step 3. At beam-size iris assembly, disconnect motor connectors (**Figure 2-20**).

Step 4. At side rails, remove four 10-32x3/8" PPB screws and #10 split-lock washers and remove iris assembly.

Step 5. Replace iris assembly by doing steps 2 through 4 in reverse.

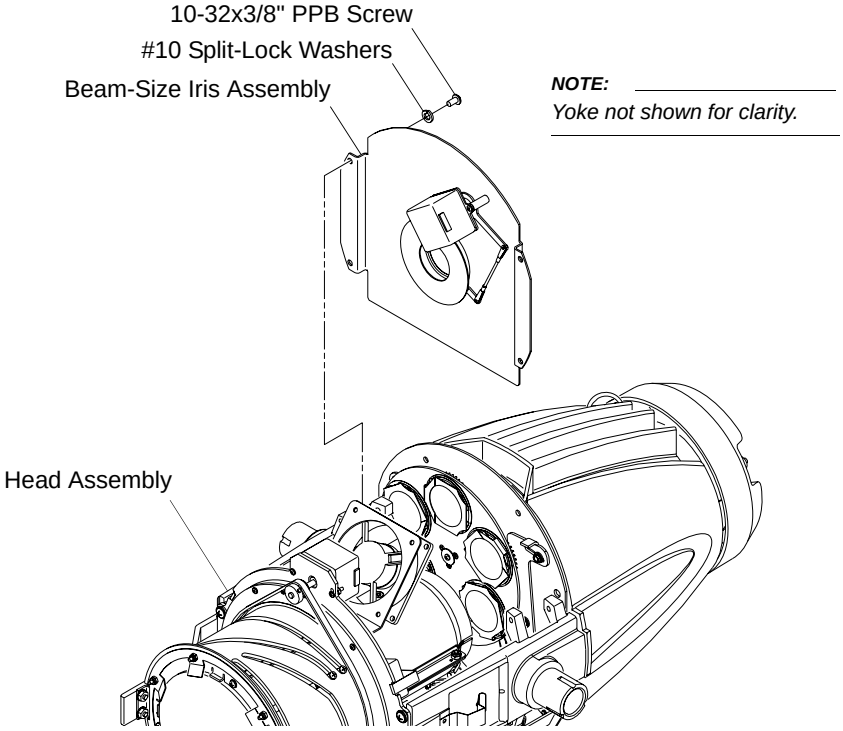


Figure 2-20: Beam-Size Iris Assembly Replacement

Ignitor PCB Replacement

Note: This procedure not applicable to all units.

Parts:

PCB ASSEMBLY, IGNITOR

Tools:

#2 Phillips screwdriver

To remove and replace ignitor PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side without menu display) by removing four 6-32x3/8" PTB screws as shown in **Figure 2-21**.

Step 3. At ignitor PCB, disconnect lamp connectors.

Step 4. Remove four 6-32x3/8" PPB screws and remove ignitor PCB.

Note: Make sure and orient ignitor properly (as shown in **Figure 2-21**).

Step 5. Replace ignitor PCB by doing steps 2 through 4 in reverse.

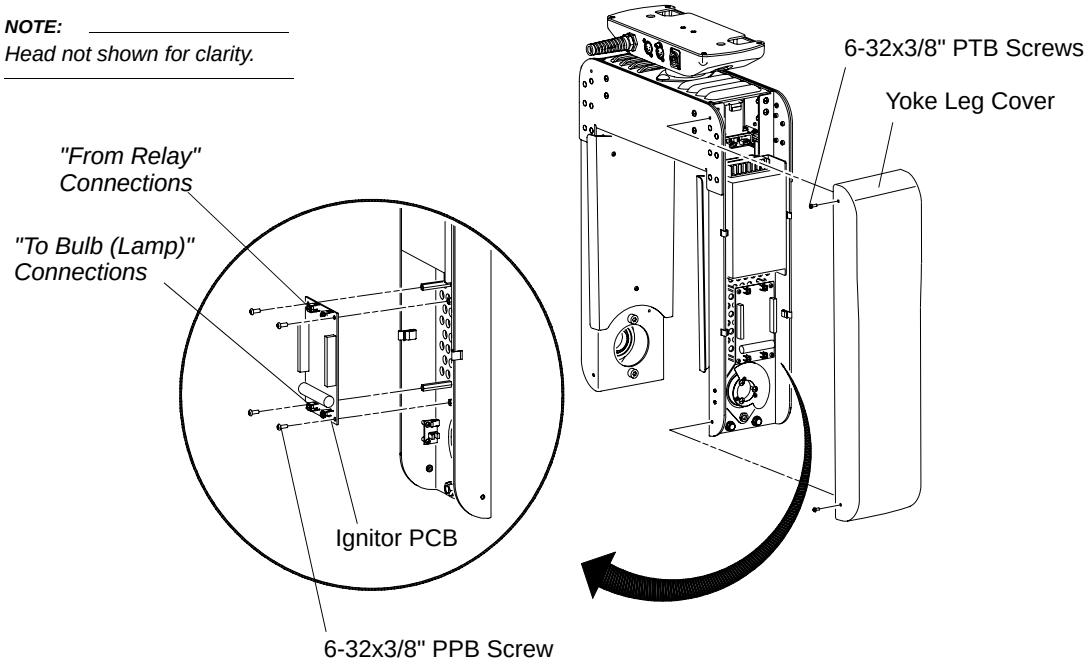


Figure 2-21: Ignitor PCB Replacement

Power Supply Replacement

Parts:

POWER SUPPLY, 130W +24V/6.3A

Tools:

#2 Phillips screwdriver

To remove and replace power supply:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side without menu display) by removing four 6-32x3/8" PTB screws as shown in **Figure 2-23**.

Step 3. At power supply, disconnect all connectors.

Step 4. Loosen two 4-40x1/2" PPZ screws and remove one 4-40x1/2" PPZ screw. Remove power supply.

Step 5. Replace LVS. Reconnect all cables as follows:

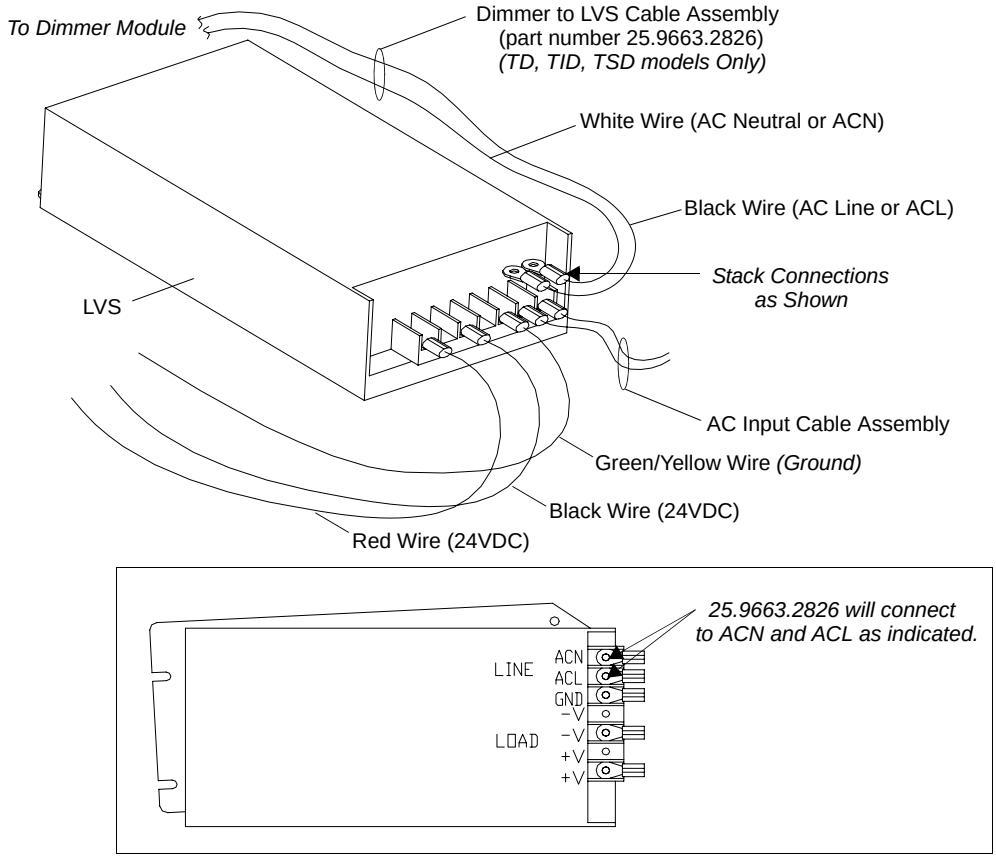


Figure 2-22: Low-Voltage Supply (LVS)

Power Supply Replacement (continued)

NOTE:
Head not shown for clarity.

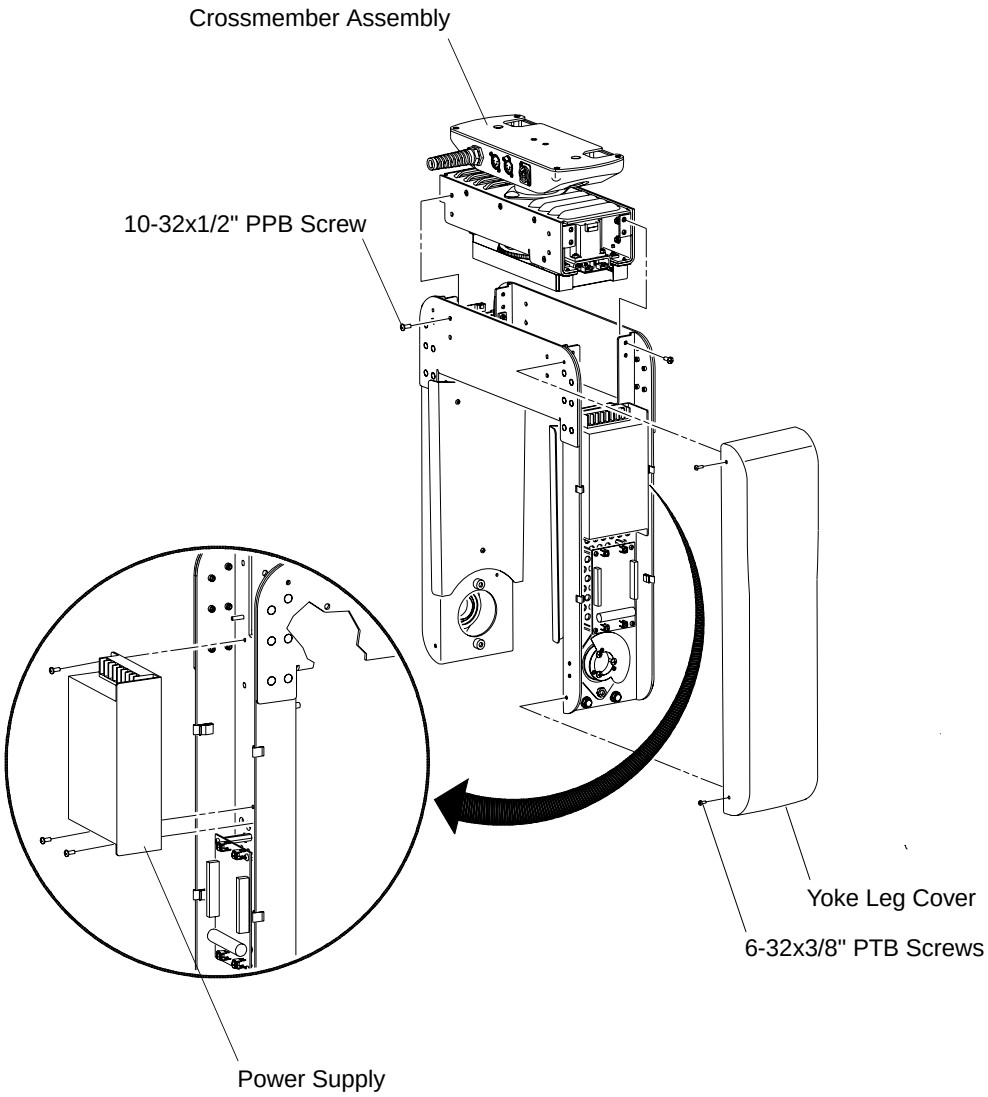


Figure 2-23: Power Supply Replacement

Controller PCB Replacement

Parts:

PCB ASSEMBLY, CONTROLLER

Tools:

#2 Phillips screwdriver

To remove and replace controller PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side with menu display) by removing four 6-32x3/8" PTB screws as shown in **Figure 2-24**.

Step 3. Remove display overlay and plate, by removing three 6-32x1/2" PPB screws.

Step 4. At controller PCB, disconnect wiring at connectors marked:

a. GOBO/COLOR/ZOOM/EDGE/DIMMER/ROTATE

b. PAN/TILT

c. POWER

d. COMM

e. SHUTTERS (if applicable)

f. BALLAST (if applicable)

g. DIMMER (if applicable)

Step 5. At controller PCB, remove four 6-32x3/8" PPB screws and remove PCB.

Step 6. Replace controller PCB by doing steps 2 through 5 in reverse.

Controller PCB Replacement (continued)

NOTE:
Head not shown for clarity.

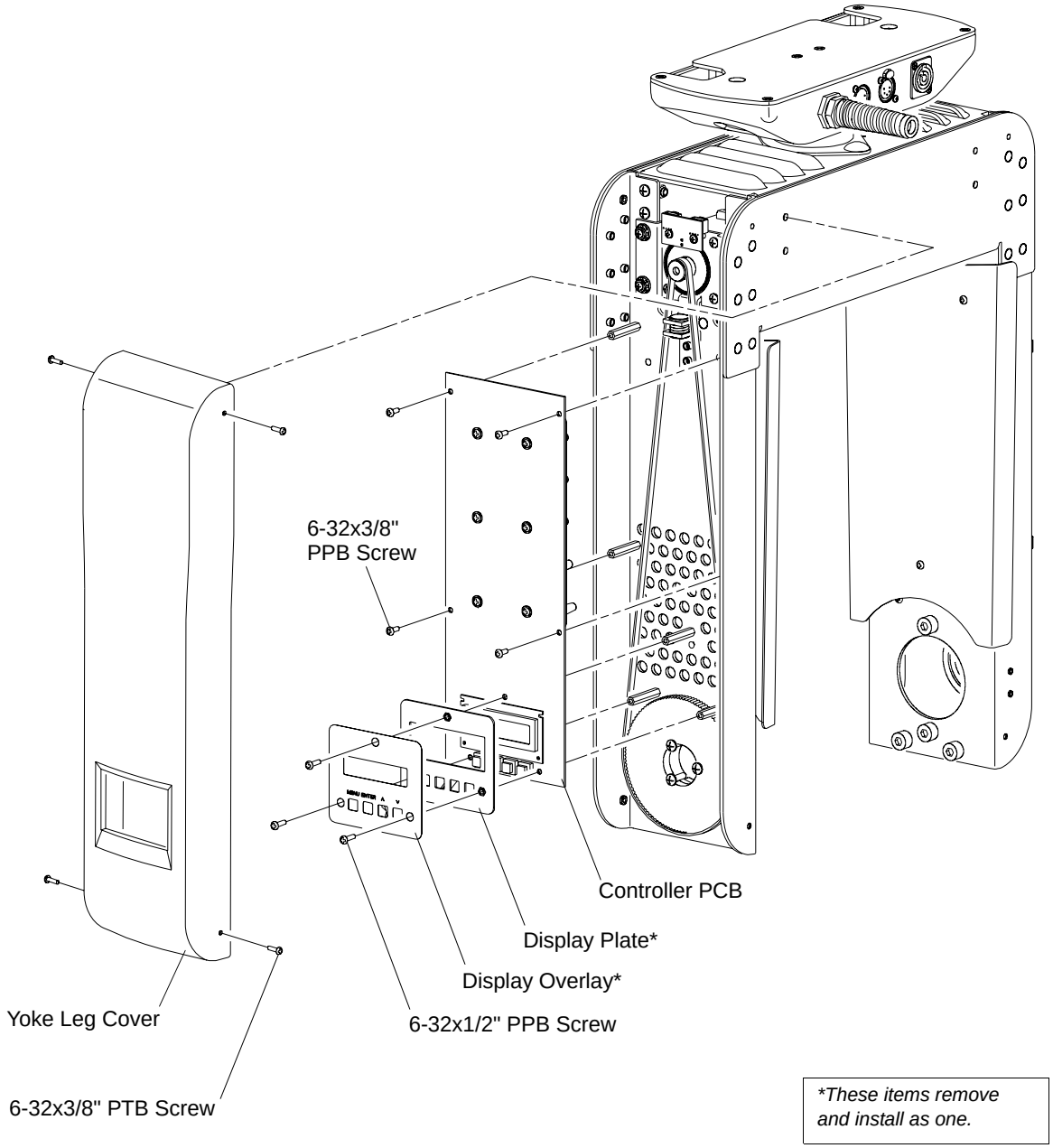


Figure 2-24: Controller PCB Replacement

Tilt Encoder PCB Replacement

Parts:

PCB ASSY, PAN/TILT ENCODER

Tools:

#1 Phillips screwdriver

#2 Phillips screwdriver

To remove and replace tilt encoder PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side with menu display) by removing four 6-32x3/8" PTB screws.

Step 3. As shown in **Figure 2-25**, at tilt encoder PCB, remove two 4-40x1/4" PPZ screws.

Step 4. Disconnect connectors at J1 and J2.

Step 5. Remove encoder PCB.

Step 6. Replace encoder PCB by doing steps 2 through 5 in reverse.

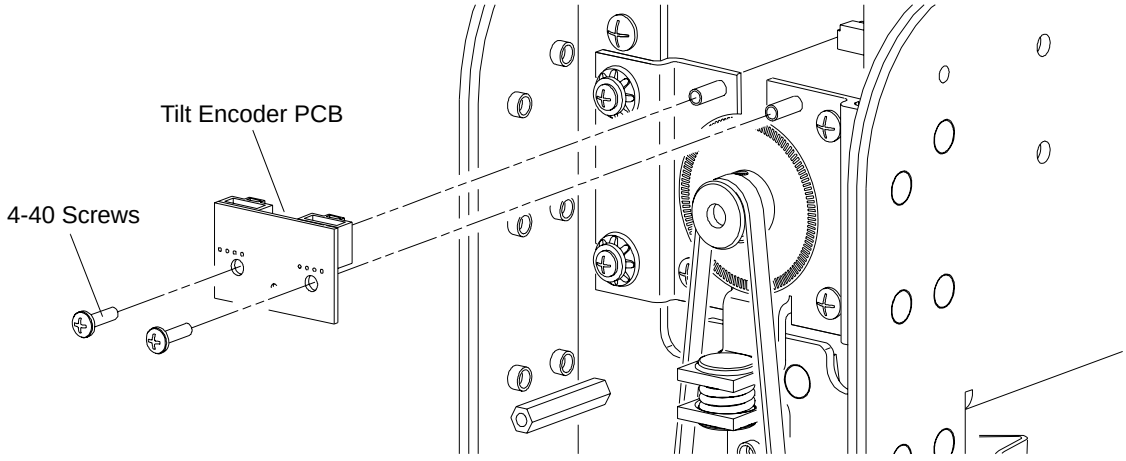


Figure 2-25: Tilt Encoder PCB Replacement

Tilt Motor Assembly Replacement

Parts:

ASSEMBLY, TILT MOTOR

Tools:

#1 Phillips screwdriver

#2 Phillips screwdriver

To remove and replace tilt motor assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side with menu display) by removing four 6-32x3/8" PTB screws (**Figure 2-26**).

Step 3. Remove display overlay and plate, by removing three 6-32x1/2" PPB screws.

Step 4. At controller PCB, disconnect wiring at connectors marked:

a. GOBO/COLOR/ZOOM/EDGE/DIMMER/ROTATE

b. PAN/TILT

c. POWER

d. COMM

e. SHUTTERS (if applicable)

f. BALLAST (if applicable)

g. DIMMER (if applicable)

Step 5. Remove four 6-32x3/8" PPB screws and remove controller PCB.

Step 6. At encoder PCB, remove two 4-40x1/4" PPZ screws.

Step 7. Disconnect connectors at J1 and J2 and remove encoder PCB.

Step 8. At tilt motor assembly, loosen four 6-32x1" PPB screws. Slide assembly forward and remove belt from pulley.

Step 9. Remove four 6-32x1" PPB screws and #6 flat washers and remove tilt motor assembly (spring and nut plates [x2] will come loose also).

Step 10. Replace by doing steps 2 through 9 in reverse. (Belt tension is automatically set by spring.)

Note: When tightening, start at lower left from spring, if spring is at top, and continue in clock-wise direction.

Tilt Motor Assembly Replacement (continued)

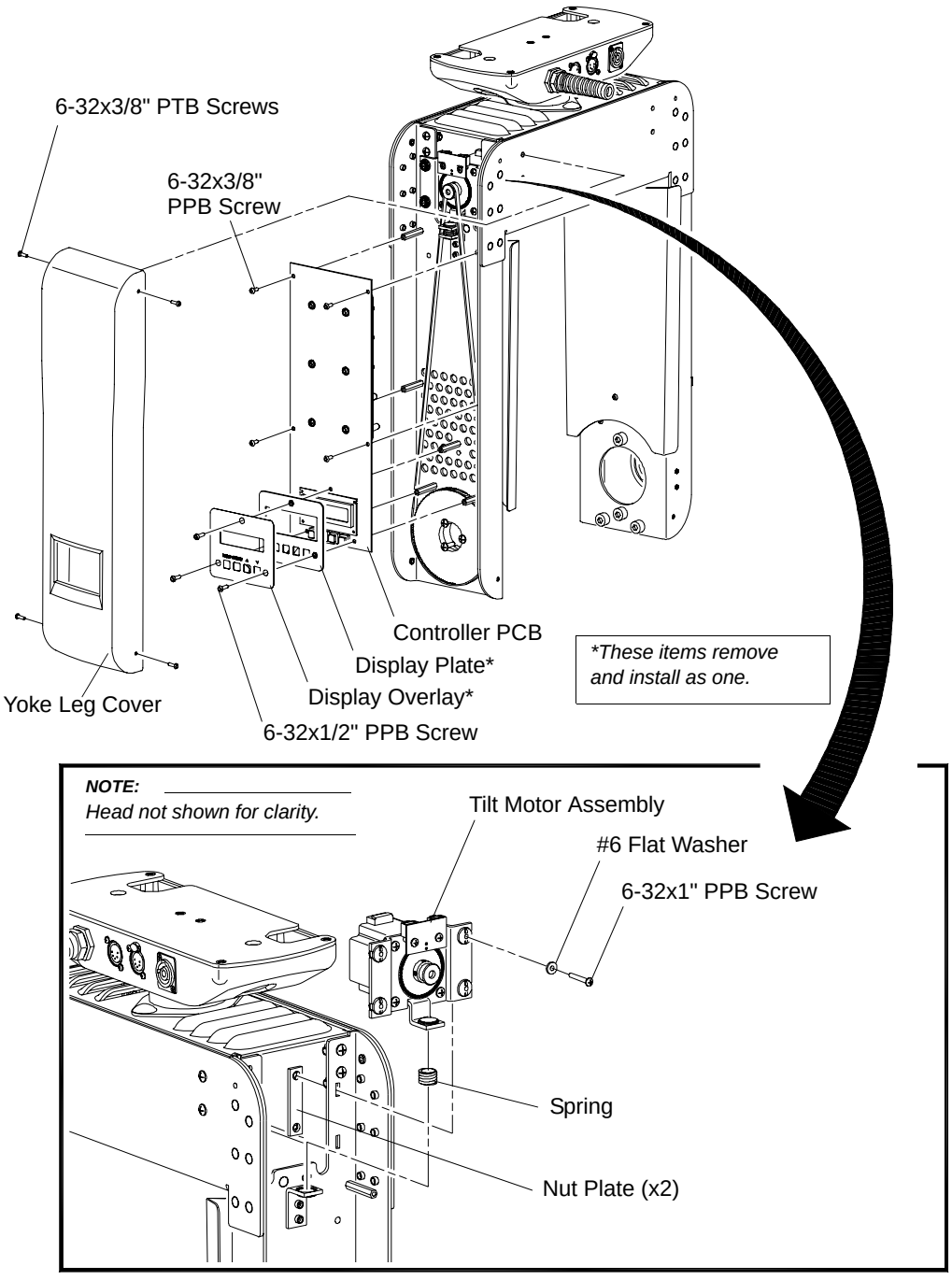


Figure 2-26: Tilt Motor Assembly Replacement

Pan Motor Assembly Replacement

Parts:

ASSEMBLY, PAN MOTOR

Tools:

#1 Phillips screwdriver

#2 Phillips screwdriver

To remove and replace pan motor assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg covers by removing four 6-32x3/8" PTB screws on each side (**Figure 2-27**).

Step 3. Remove crossmember assembly from yoke by removing twelve 10-32x1/2" PPB screws.

Step 4. At crossmember assembly, remove pan wire shield by removing four 4-40x3/8" PPZ screws.

Step 5. At pan motor assembly, loosen four 6-32x1" PPB screws. Slide assembly forward and remove belt from pulley.

Step 6. Remove four 6-32x1" PPB screws and #6 flat washers and remove pan motor assembly (nut plate will come loose also).

Step 7. Replace pan motor assembly by doing steps 2 through 6 in reverse. (Belt tension is automatically set by spring.)

Pan Motor Replacement (continued)

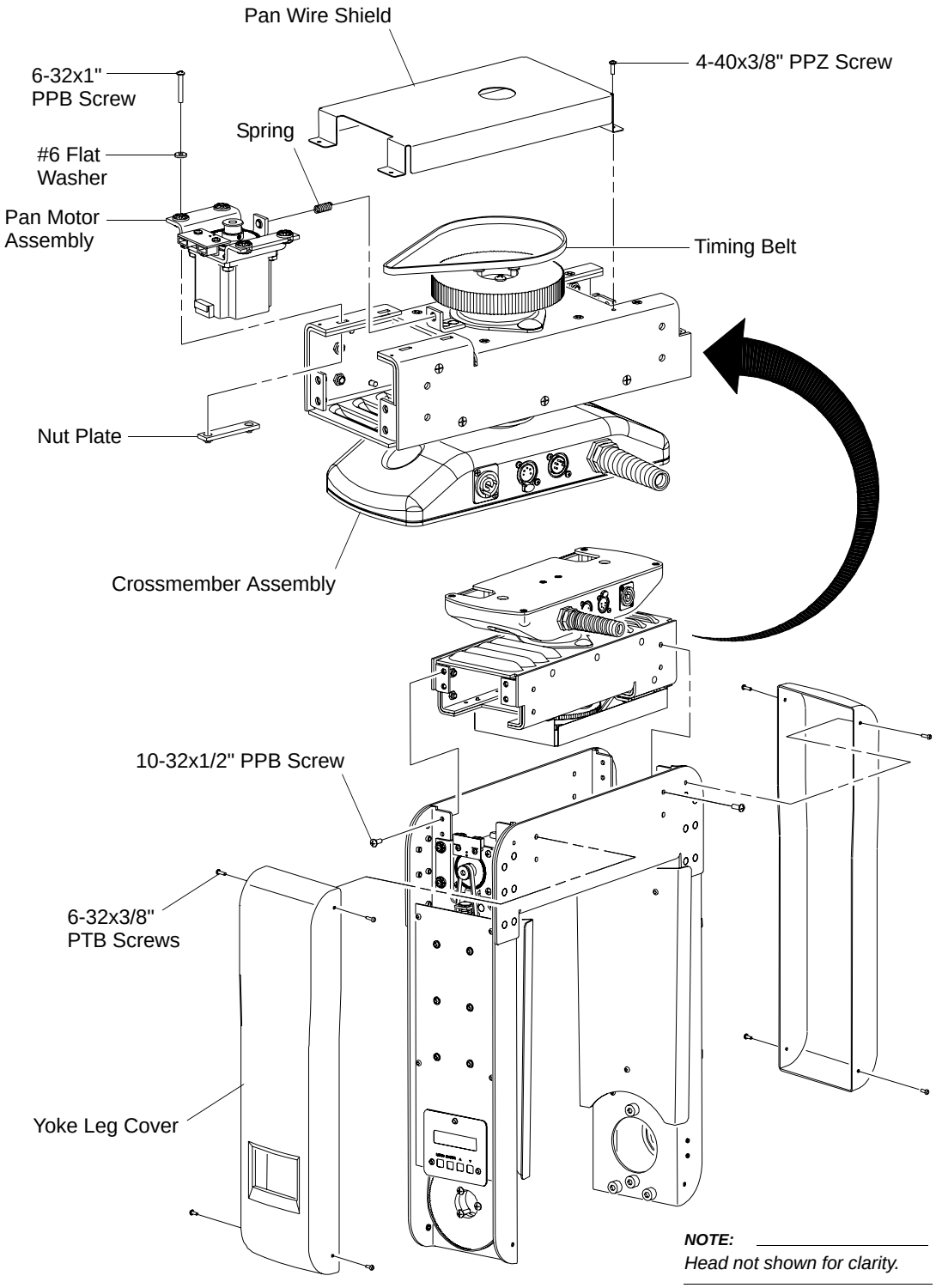


Figure 2-27: Pan Motor Assembly Replacement

DMX Input PCB Replacement

Parts:

PCB ASSEMBLY, DMX INPUT

Tools:

#1 Phillips screwdriver

#2 Phillips screwdriver

To remove and replace DMX input PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. At pan tube cover, remove four 8-32x3/8" PFZ screws and remove cover (**Figure 2-28**).

Step 3. Remove four #4x3/8" HiLo screws.

Step 4. Disconnect DMX input PCB wiring and remove PCB.

Step 5. Replace DMX input PCB by doing steps 2 through 4 in reverse.

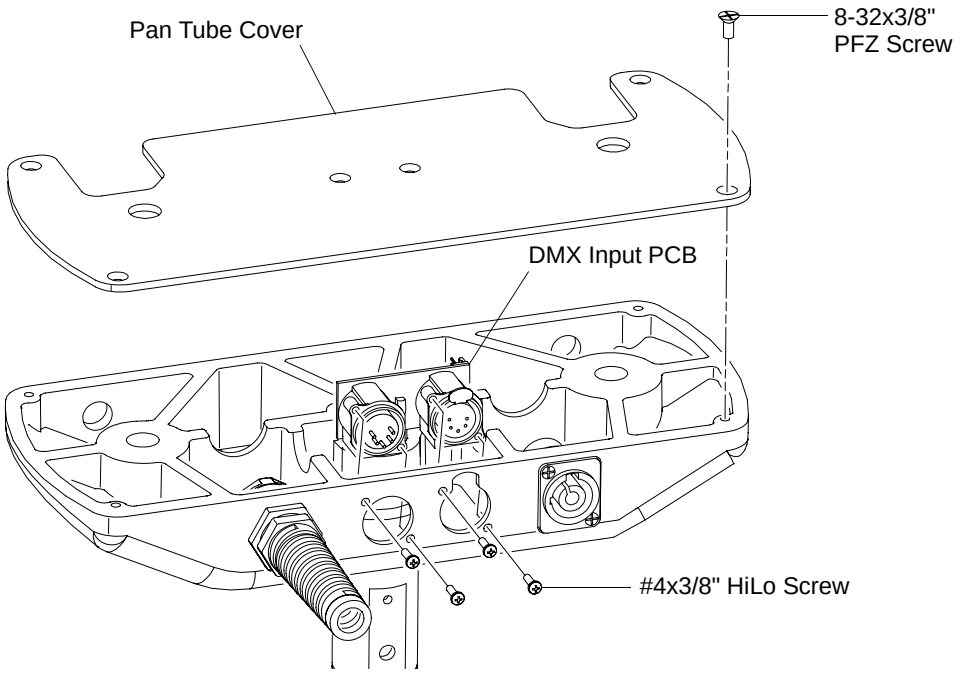


Figure 2-28: DMX Input PCB Replacement

Cleaning Optical Lenses and Filters

WARNING: Remove power from luminaire before performing maintenance.

The front lens, color filters, and gobos may require cleaning after extended use. Isopropyl Alcohol should only be used, with a soft, lint-free cloth, to clean these components.

To access gobos, refer to “Rotating Gobo Replacement” on page 31.

Notes

CHAPTER 3.

Illustrated Parts Breakdown

This chapter contains illustrated parts breakdowns for all VL1100 ERS Luminaire assemblies.

- **Drawing Trees**
- **Top Assembly**
- **Head Assembly**
- **Yoke Assembly**
- **Cables**

The following abbreviations are used to identify parts specific to certain models:

ABBREVIATION	MODEL
TI	VL1100 Incandescent Luminaire w/ Beam-Size Iris
TS	VL1100 Incandescent Luminaire w/ Shutter System
AI	VL1100 Arc Luminaire with Beam-Size Iris
AS	VL1100 Arc Luminaire with Shutter System
TSD115	VL1100 Incandescent with 115V Dimmer and Shutter System
TID115	VL1100 Incandescent with 115V Dimmer and Beam-Size Iris
TSD230	VL1100 Incandescent with 230V Dimmer and Shutter System
TID230	VL1100 Incandescent with 230V Dimmer and Beam-Size Iris

SERVICE

Drawing Trees

VL1100 Incandescent Luminaires

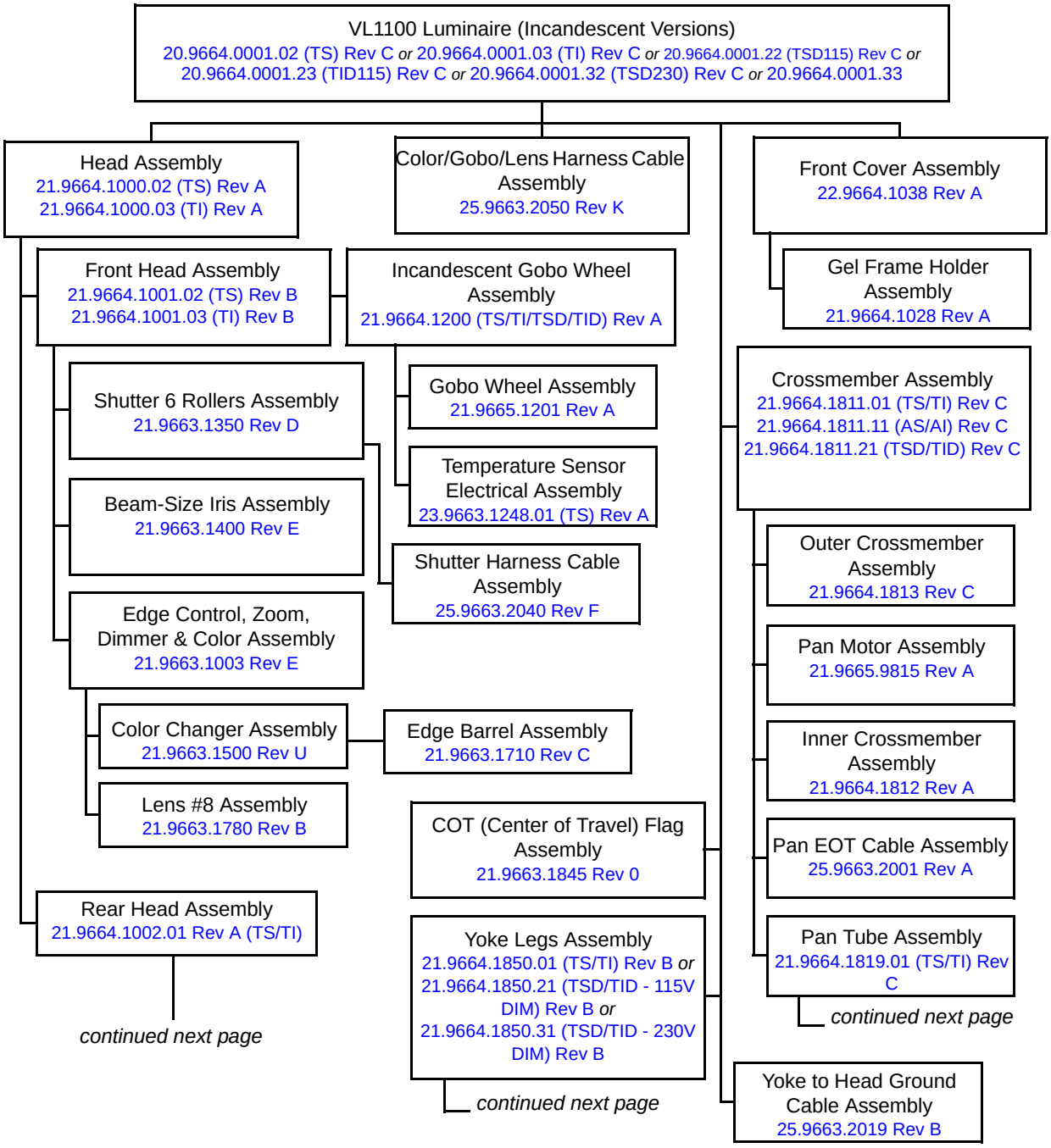
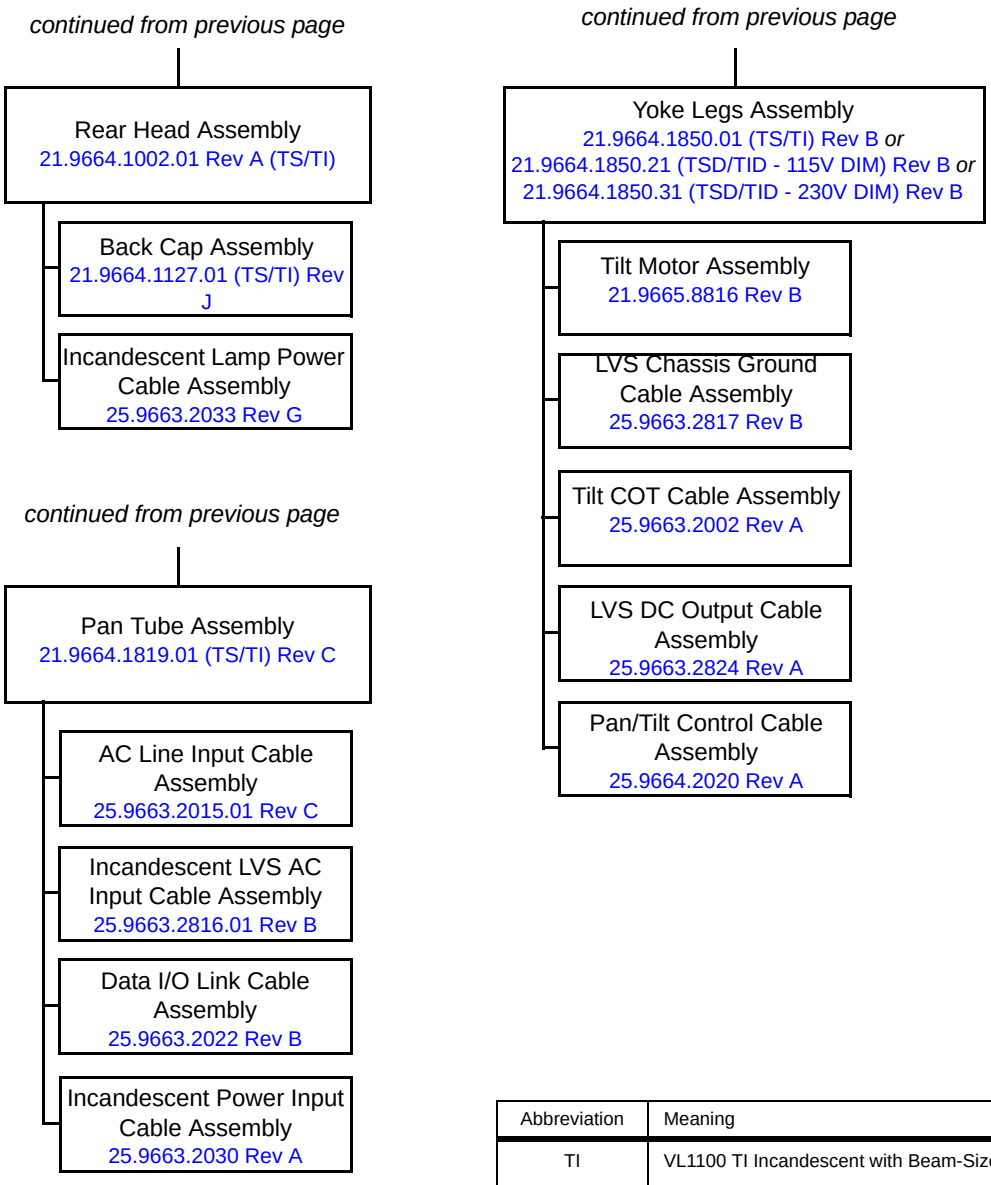

VL1100 Luminaire (Incandescent Versions)
20.9664.0001.02 (TS) Rev C or 20.9664.0001.03 (TI) Rev C or 20.9664.0001.22 (TSD115) Rev C or 20.9664.0001.23 (TID115) Rev C or 20.9664.0001.32 (TSD230) Rev C or 20.9664.0001.33
Head Assembly
21.9664.1000.02 (TS) Rev A
21.9664.1000.03 (TI) Rev A
Color/Gobo/Lens Harness Cable Assembly
25.9663.2050 Rev K
Front Cover Assembly
22.9664.1038 Rev A
Front Head Assembly
21.9664.1001.02 (TS) Rev B
21.9664.1001.03 (TI) Rev B
Incandescent Gobo Wheel Assembly
21.9664.1200 (TS/TI/TSD/TID) Rev A
Gel Frame Holder Assembly
21.9664.1028 Rev A
Shutter 6 Rollers Assembly
21.9663.1350 Rev D
Gobo Wheel Assembly
21.9665.1201 Rev A
Crossmember Assembly
21.9664.1811.01 (TS/TI) Rev C
21.9664.1811.11 (AS/AI) Rev C
21.9664.1811.21 (TSD/TID) Rev C
Temperature Sensor Electrical Assembly
23.9663.1248.01 (TS) Rev A
Beam-Size Iris Assembly
21.9663.1400 Rev E
Outer Crossmember Assembly
21.9664.1813 Rev C
Shutter Harness Cable Assembly
25.9663.2040 Rev F
Edge Control, Zoom, Dimmer & Color Assembly
21.9663.1003 Rev E
Pan Motor Assembly
21.9665.9815 Rev A
Color Changer Assembly
21.9663.1500 Rev U
Edge Barrel Assembly
21.9663.1710 Rev C
Inner Crossmember Assembly
21.9664.1812 Rev A
Lens #8 Assembly
21.9663.1780 Rev B
COT (Center of Travel) Flag Assembly
21.9663.1845 Rev 0
Pan EOT Cable Assembly
25.9663.2001 Rev A
Rear Head Assembly
21.9664.1002.01 Rev A (TS/TI)
Yoke Legs Assembly
21.9664.1850.01 (TS/TI) Rev B or
21.9664.1850.21 (TSD/TID - 115V DIM) Rev B or
21.9664.1850.31 (TSD/TID - 230V DIM) Rev B
Pan Tube Assembly
21.9664.1819.01 (TS/TI) Rev C
continued next page
continued next page
continued next page
Yoke to Head Ground Cable Assembly
25.9663.2019 Rev B

Figure 3-1: VL1100 Incandescent Luminaires Drawing Tree (Part 1)

VL1100 Incandescent Luminaires (continued)


continued from previous page
Rear Head Assembly
21.9664.1002.01 Rev A (TS/TI)
Back Cap Assembly
21.9664.1127.01 (TS/TI) Rev J
Incandescent Lamp Power Cable Assembly
25.9663.2033 Rev G
continued from previous page
Pan Tube Assembly
21.9664.1819.01 (TS/TI) Rev C
AC Line Input Cable Assembly
25.9663.2015.01 Rev C
Incandescent LVS AC Input Cable Assembly
25.9663.2816.01 Rev B
Data I/O Link Cable Assembly
25.9663.2022 Rev B
Incandescent Power Input Cable Assembly
25.9663.2030 Rev A
continued from previous page
Yoke Legs Assembly
21.9664.1850.01 (TS/TI) Rev B or
21.9664.1850.21 (TSD/TID - 115V DIM) Rev B or
21.9664.1850.31 (TSD/TID - 230V DIM) Rev B
Tilt Motor Assembly
21.9665.8816 Rev B
LVS Chassis Ground Cable Assembly
25.9663.2817 Rev B
Tilt COT Cable Assembly
25.9663.2002 Rev A
LVS DC Output Cable Assembly
25.9663.2824 Rev A
Pan/Tilt Control Cable Assembly
25.9664.2020 Rev A

Abbreviation	Meaning
TI	VL1100 TI Incandescent with Beam-Size Iris
TS	VL1100 TS Incandescent with Shutter System
TID	VL1100 TI Incandescent with Beam-Size Iris and On-Board IGBT Dimmer (115 or 230V)
TSD	VL1100 TS Incandescent with Shutter System and On-Board IGBT Dimmer (115 or 230V)

Figure 3-2: VL1100 Incandescent Luminaires Drawing Tree (Part 2)

VL1100 Arc Luminaires

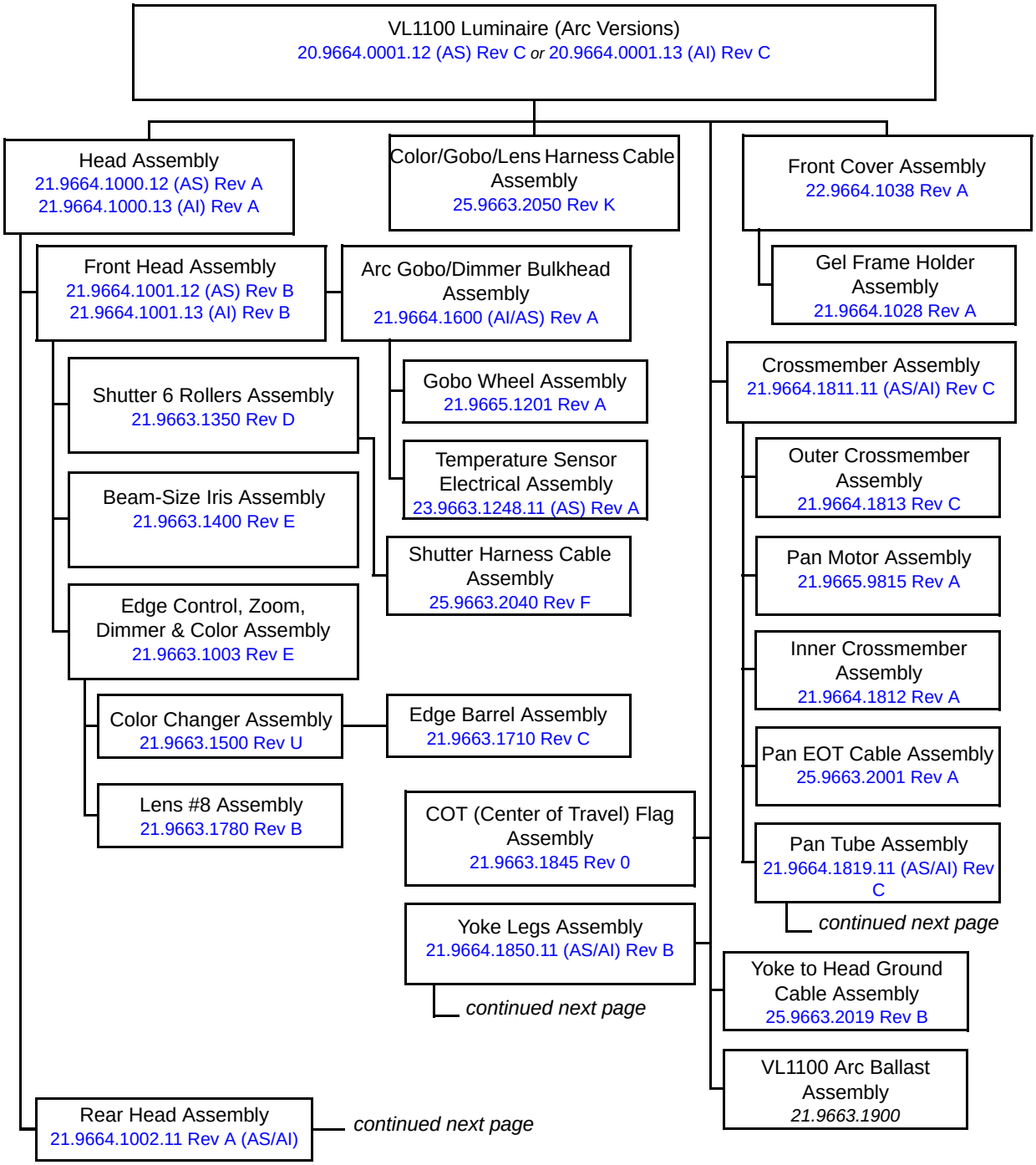
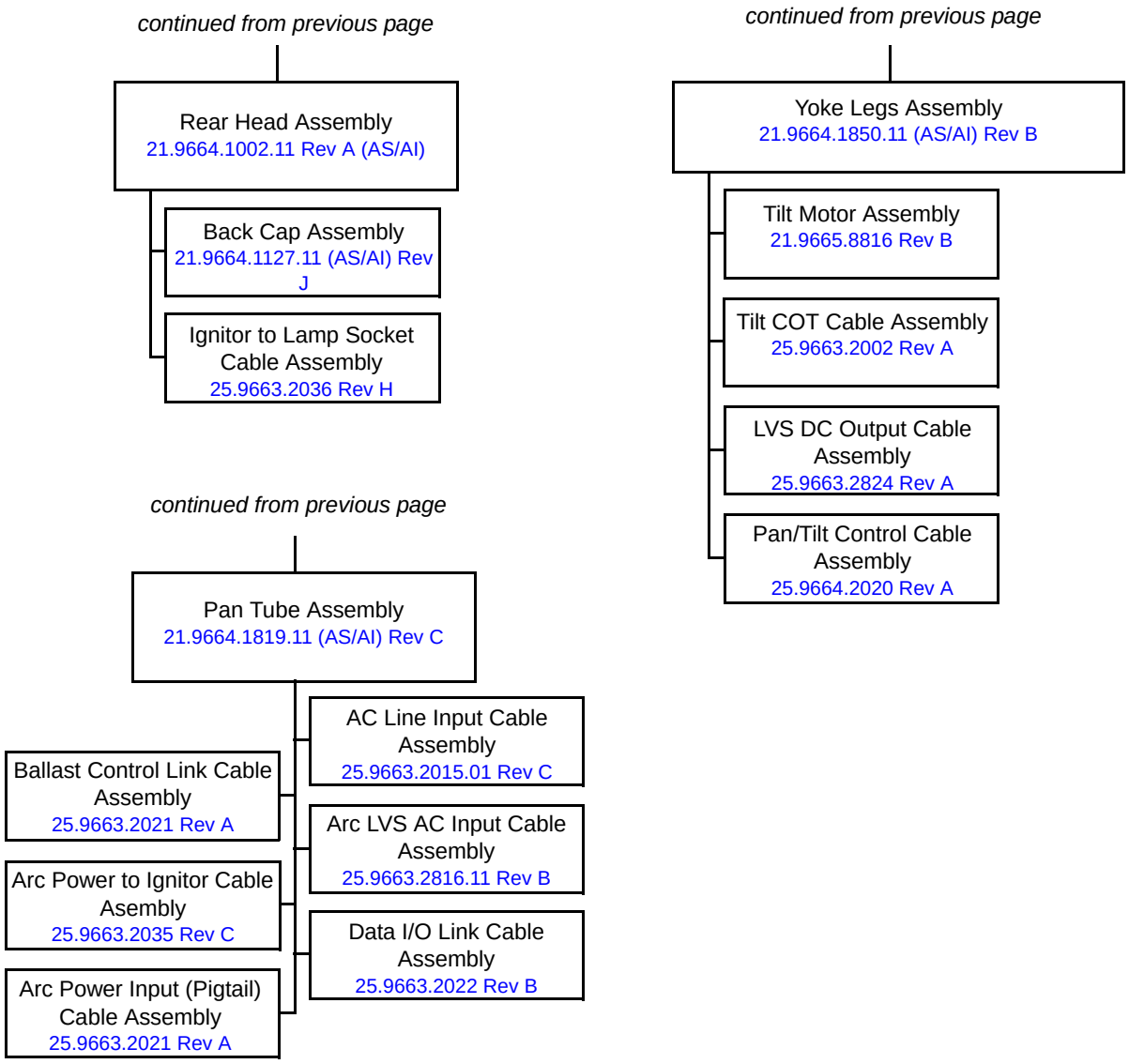


Figure 3-3: VL1100 Arc Luminaires Drawing Tree (Part 1)

VL1100 Arc Luminaires (continued)



Abbreviation	Meaning
AI	VL1100 AI Arc with Beam-Size Iris
AS	VL1100 AS Arc with Shutter System

Figure 3-4: VL1100 Incandescent Luminaires Drawing Tree (Part 2)

Top Assembly

Included Items Kit

28.9664.0001.02 Rev A (Incandescent - TS Only)
28.9664.0001.03 Rev A (Incandescent - TI Only)
28.9664.0001.12 Rev A (Arc - AS Only)
28.9664.0001.13 Rev A (Arc - AI Only)
28.9664.0001.22 Rev A (Incandescent - TSD 115V Only)
28.9664.0001.23 Rev A (Incandescent - TID 115V Only)
28.9664.0001.32 Rev A (Incandescent - TSD 230V Only)
28.9664.0001.33 Rev A (Incandescent - TID 230V Only)

Refer to Figure 3-5.

No.	Item	Qty.	UM.	Description
1	02.8001.0001	1	EA	PRODUCT SUPPORT SHEET, VARI-LITE CUSTOMER SERVICE
2	02.8001.0002	1	EA	VARI-LITE QUALITY ASSURANCE CERTIFICATE
3	02.8052.0001	1	EA	CARD, LIMITED WARRANTY
4	02.8700.0001	1	EA	CARD, PRODUCT REGISTRATION
5	02.9664.0002	1	EA	UNPACK/QUICK START SHEET, VL1100
6	06.6073.0001	1	EA	FOAM, SHIPPING
7	07.9663.0032	1	EA	SHIPPING BOX, CARDBOARD
8	08.1100.0001	1	EA	CD ROM, VL1100 PRODUCT, DOCUMENTATION
9	52.6541.0001	1	EA	CONN, BLUE CABLE PWR INLET 3-POLE LOCKING - POWERCON
10	53.6505.0027	1	EA	BOLT, 1/2" X 13 X 1" LG HX HD ZINC (**AS/AI ONLY**)
11	55.6539.0001	1	EA	WASHER, 1/2" SPLIT LOCK (**AS/AI ONLY**)

Note: Lamps supplied per customer order (depending on model). See User's Manual, Product Specifications, or contact Vari-Lite Customer Service for available lamp types for each model.

Included Items Kit (continued)

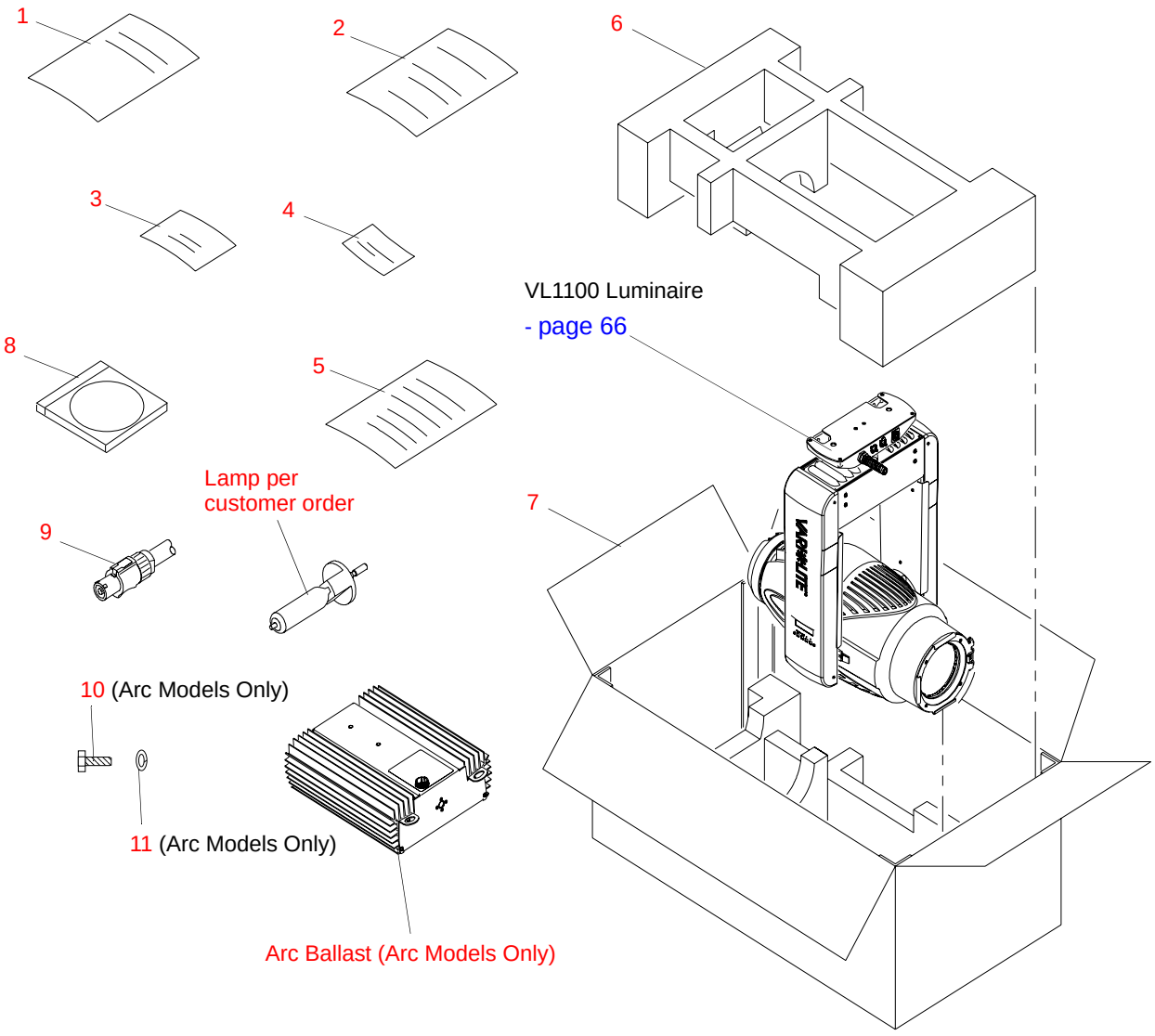


Figure 3-5: Included Items

VL1100 Luminaire

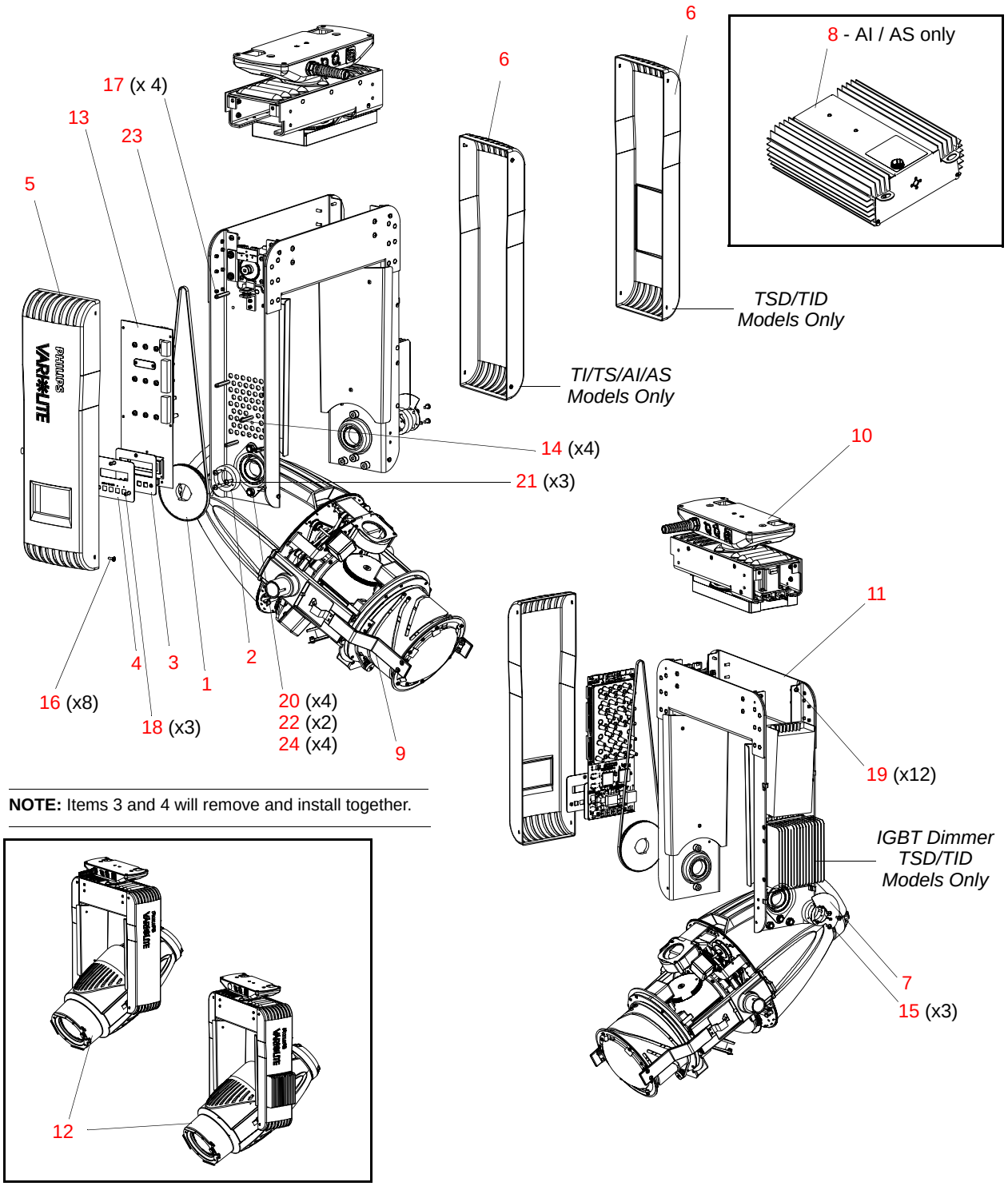
20.9664.0001.02 (TS) Rev C
20.9664.0001.03 (TI) Rev C
20.9664.0001.12 (AS) Rev C
20.9664.0001.13 (AI) Rev C
20.9664.0001.22 (TSD115) Rev C
20.9664.0001.23 (TID115) Rev C
20.9664.0001.32 (TSD230) Rev C
20.9664.0001.33 (TID230) Rev C

Refer to Figure 3-6

No.	Item	Qty.	UM.	Description
-	04.9678.1000	2	EA	LABEL, GREEN, ROHS COMPLIANT (**NOT SHOWN**)
-	04.9678.1001	2	EA	LABEL, WHITE, ROHS COMPLIANT (**NOT SHOWN**)
1	10.9663.1823	1	EA	PULLEY, TILT
2	10.9663.1824	1	EA	SPACER, TILT TUBE
3	10.9663.1831	1	EA	PLATE, DISPLAY
4	10.9663.1832	1	EA	OVERLAY, DISPLAY
5	10.9664.2835	1	EA	COVER, YOKE ARM, DISPLAY SIDE
6	10.9664.2836	1	EA	COVER, YOKE ARM, NO DISPLAY (**TI/TS/AI/AS ONLY**)
	10.9664.2874	1	EA	COVER, YOKE ARM, DIMMER SIDE (**TID/TSD ONLY**)
7	21.9663.1845	1	EA	ASSY, COT FLAG
8	21.9663.1901	1	EA	ASSY, ARC BALLAST (**AI/AS ONLY**)
9	21.9664.1000.02	1	EA	HEAD ASSEMBLY, INCANDESCENT, SHUTTER (**TS/TSD ONLY**)
	21.9664.1000.03	1	EA	HEAD ASSEMBLY, INCANDESCENT, IRIS (**TI/TID ONLY**)
	21.9664.1000.12	1	EA	HEAD ASSEMBLY, ARC, SHUTTER (**AS ONLY**)
	21.9664.1000.13	1	EA	HEAD ASSEMBLY, ARC, IRIS (**AI ONLY**)
10	21.9664.1811.01	1	EA	ASSY, CROSSMEMBER, INCANDESCENT (**TI/TS ONLY**)
	21.9664.1811.11	1	EA	ASSY, CROSSMEMBER, ARC (**AI/AS ONLY**)
	21.9664.1811.21	1	EA	ASSY, CROSSMEMBER, IGBT DIMMER (**TSD/TID ONLY**)
11	21.9664.1850.01	1	EA	ASSY, YOKE LEGS, INCANDESCENT (**TI/TS ONLY**)
	21.9664.1850.11	1	EA	ASSY, YOKE LEGS, ARC (**AI/AS ONLY**)
	21.9664.1850.21	1	EA	ASSY, YOKE LEGS, 115V IGBT DIMMER (**TSD115/TID115 ONLY**)
	21.9664.1850.31	1	EA	ASSY, YOKE LEGS, 230V IGBT DIMMER (**TSD230/TID230 ONLY**)
12	22.9664.1038	1	EA	ASSY, FRONT COVER/GEL FRAME HOLDER
13	24.9664.1700	1	EA	BOARD ASSY, VL1100 MCB
-	25.9663.2019	1	EA	CABLE ASSY, YOKE/HEAD GROUND (**NOT SHOWN**)
-	25.9663.2036	1	EA	CABLE ASSY, LAMP HIGH VOLTAGE (**AS/AI ONLY - NOT SHOWN**)

No.	Item	Qty.	UM.	Description
-	25.9663.2040	1	EA	CABLE ASSY, SHUTTER HARNESS (**TS/TSD/AS ONLY - NOT SHOWN**)
-	25.9663.2050	1	EA	CABLE ASSY, 10 MOTORS / 2 SENSORS
-	28.9664.0001.02	1	EA	INCLUDED ITEMS KIT (**TS ONLY - NOT SHOWN**)
	28.9664.0001.03	1	EA	INCLUDED ITEMS KIT (**TI ONLY - NOT SHOWN**)
	28.9664.0001.12	1	EA	INCLUDED ITEMS KIT (**AS ONLY - NOT SHOWN**)
	28.9664.0001.13	1	EA	INCLUDED ITEMS KIT (**AI ONLY - NOT SHOWN**)
	28.9664.0001.22	1	EA	INCLUDED ITEMS KIT (**TSD115 ONLY - NOT SHOWN**)
	28.9664.0001.23	1	EA	INCLUDED ITEMS KIT (**TID115 ONLY - NOT SHOWN**)
	28.9664.0001.32	1	EA	INCLUDED ITEMS KIT (**TSD230 ONLY - NOT SHOWN**)
	28.9664.0001.33	1	EA	INCLUDED ITEMS KIT (**TID230 ONLY - NOT SHOWN**)
14	53.2019.0004	4	EA	NUT, 3/8-16 X 7/32 THK HEX JAM
15	53.6517.0001	3	EA	SCREW, 10-32 X 3/8 PPB TYPE F
16	53.6523.0013	8	EA	SCREW, 6-32 X 3/8 PTB
17	53.6543.0001	4	EA	SCREW, 6-32 X 3/8 PPB
18	53.6614.0001	3	EA	SCREW, 6-32 X 5/8 PPB
19	53.6627.0001	12	EA	SCREW, 10-32 X 5/8 PPB
20	53.6634.0003	4	EA	SCREW, 3/8-16 X 1/2 SOC HD CAP
21	53.6642.0001	3	EA	SCREW, 10-32 X 5/8 SLF TAP TYPE F
22	54.1255.0001	2	EA	ASSY, BEARING/HOUSING
23	54.2047.0039	1	EA	BELT, TIMING, GT, 3MM 350 GRV
24	55.2115.0001	4	EA	WASHER, 3/8, 0.04 THK, INT TOOTH

VL1100 Luminaire (continued)



NOTE: Items 3 and 4 will remove and install together.

Figure 3-6: VL1100 Luminaire

Front Cover Assembly

22.9664.1038 Rev A

Refer to Figure 3-7.

No.	Item	Qty.	UM.	Description
1	10.9663.2020	1	EA	COVER, FRONT VL1100
2	21.9664.1028	1	EA	ASSY, GEL FRAME HOLDER
3	53.2004.0002	4	EA	NUT, 8-32 KEPS, ZINC PLATE
4	53.6545.0007	3	EA	SCREW, 8-32 X 3/8" PFB
5	53.6552.0002	1	EA	SCREW, 8-32 X 1/2" PFB

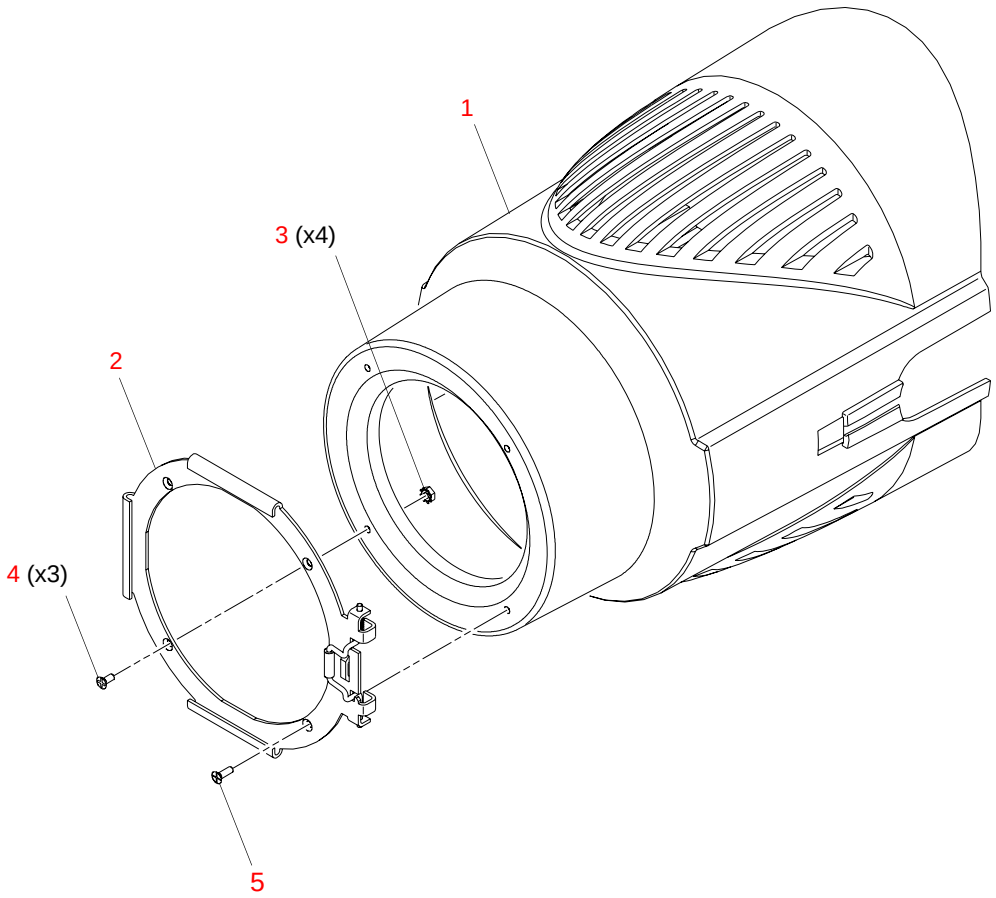


Figure 3-7: Front Cover Assembly

Gel Frame Holder Assembly

21.9664.1028 Rev A

Refer to Figure 3-8.

No.	Item	Qty.	UM.	Description
1	10.9663.1027	1	EA	HOLDER, GEL FRAME
2	10.9663.1031	1	EA	LATCH, GEL FRAME
3	55.6568.0026	1	EA	SPRING, CPRSN .180"OD .810"LG .026" WIRE DIA SS
4	55.6738.0003	.06	FT	TUBING, SILICONE RUBBER 1/8"ID X 1/4"OD TRANSLUCENT

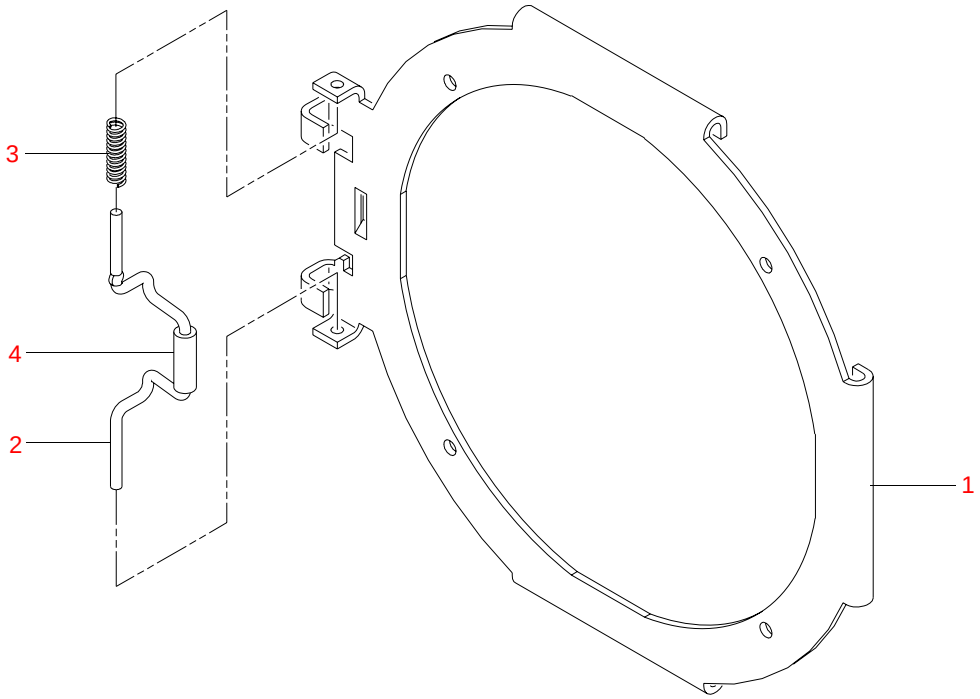


Figure 3-8: Gel Frame Holder Assembly

COT (Center of Travel) Flag Assembly

21.9663.1845 Rev 0

Refer to Figure 3-9.

No.	Item	Qty.	UM.	Description
1	10.9663.1824	1	EA	SPACER, TILT TUBE
2	10.9663.1826	1	EA	FLAG, CENTER OF TRAVEL - TILT
3	53.6602.0001	3	EA	SCREW, 4-40 X 1/4" PPZ TYPE F

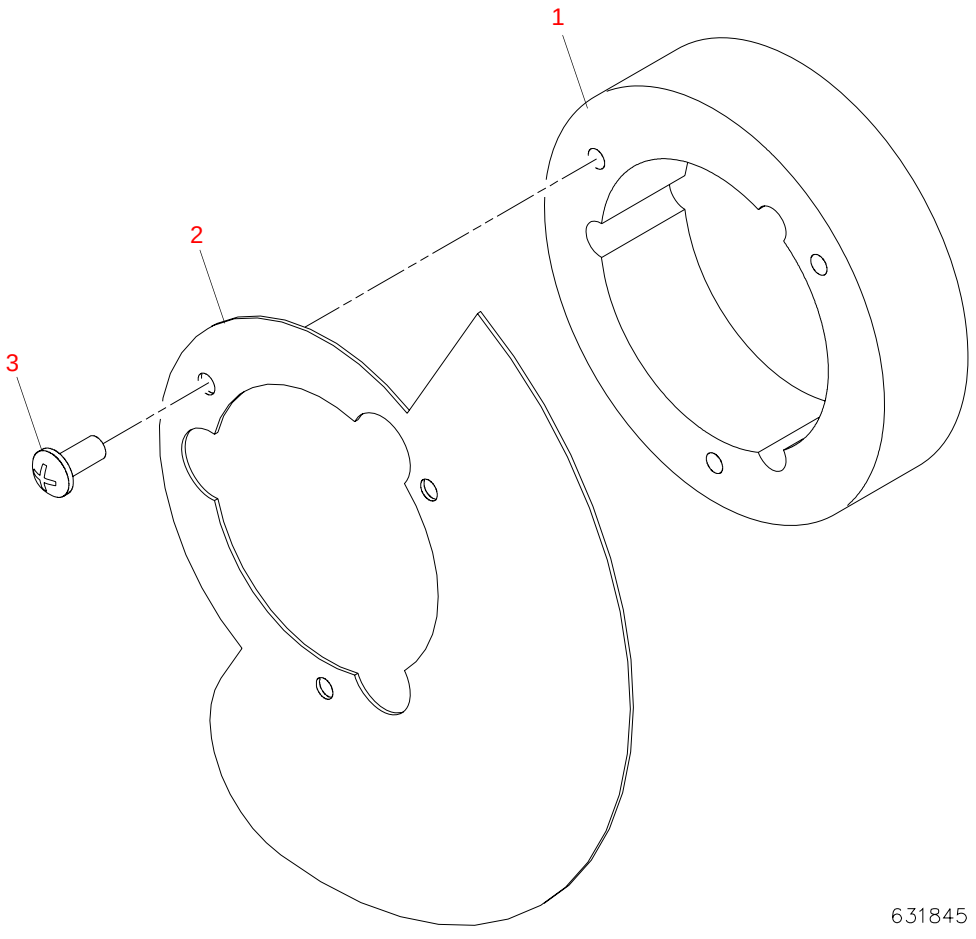


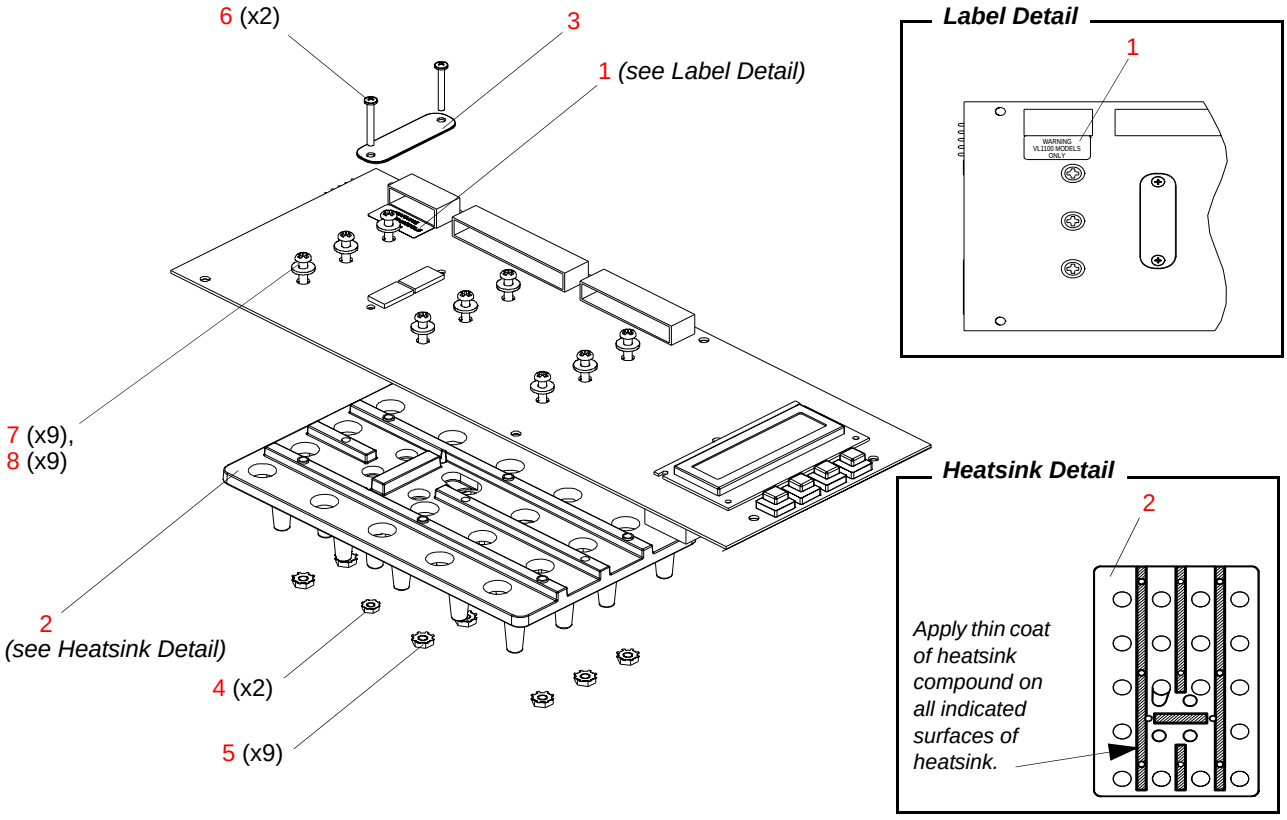
Figure 3-9: COT Flag Assembly

VL1100 Main Control Board (MCB) Assembly

24.9664.1700 Rev C

Refer to Figure 3-9.

No.	Item	Qty.	UM.	Description
1	04.9664.1700	1	EA	LABEL, VL1100 MCB WARNING
2	10.9664.1840	1	EA	HEATSINK, MAIN CONTROLLER
3	10.9664.1736	1	EA	CLAMP, PAN/TILT DRIVERS
4	53.2200.0004	2	EA	NUT, 4-40 KEPS SS
5	53.2200.0006	9	EA	NUT, 6-32 KEPS SS
6	53.6404.0003	2	EA	SCREW, 4-40 X 1.00" PPZ
7	53.6616.0001	9	EA	SCREW, 6-32 X 3/4" PPZ
8	55.3301.0006	9	EA	WASHER, #6 FLAT, SS



NOTE: MCB Assembly shown sold as a complete assembly. Hardware may be purchased separately.

Figure 3-10: VL1100 MCB Assembly

Head Assembly

Head Assembly

21.9664.1000.02 (TS) Rev A
21.9664.1000.03 (TI) Rev A
21.9664.1000.12 (AS) Rev A
21.9664.1000.13 (AI) Rev A

Refer to Figure 3-11.

No.	Item	Qty.	UM.	Description
1	10.9663.1032	2	EA	SPACER, SIDE RAIL (**TI/TS ONLY**)
		4	EA	SPACER, SIDE RAIL (**AI/AS ONLY**)
2	21.9664.1001.02	1	EA	ASSY, FRONT HEAD, INCANDESCENT WITH SHUTTER (**TS ONLY**)
	21.9664.1001.03	1	EA	ASSY, FRONT HEAD, INCANDESCENT WITH IRIS (**TI ONLY**)
	21.9664.1001.12	1	EA	ASSY, FRONT HEAD, ARC WITH SHUTTER (**AS ONLY**)
	21.9664.1001.13	1	EA	ASSY, FRONT HEAD, ARC WITH IRIS (**AI ONLY**)
3	21.9664.1002.01	1	EA	ASSY, REAR HEAD, INCANDESCENT (**TI/TS ONLY**)
	21.9664.1002.11	1	EA	ASSY, REAR HEAD, ARC (**AI/AS ONLY**)
4	53.6627.0001	4	EA	SCREW, 10-32 X 5/8" PPB
5	55.3303.0010	4	EA	WASHER, #10 0.438"OD .040" THK SPLIT LOCK SS

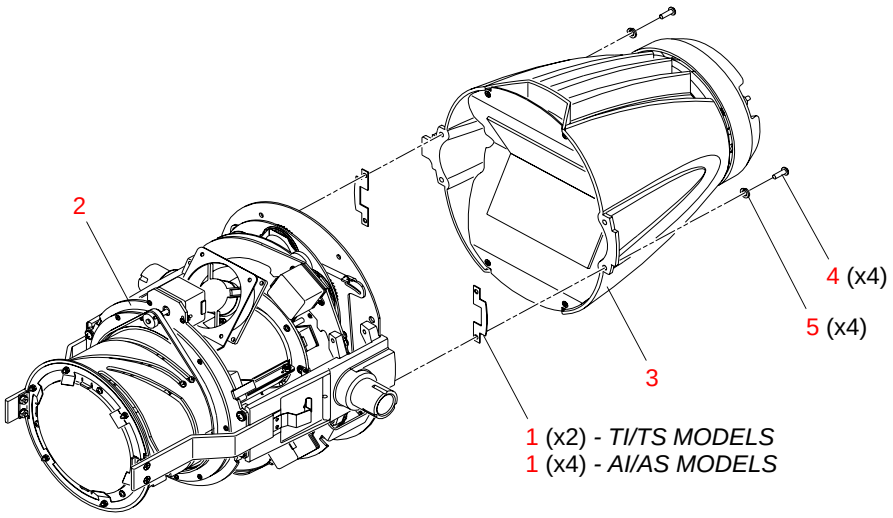


Figure 3-11: Head Assembly

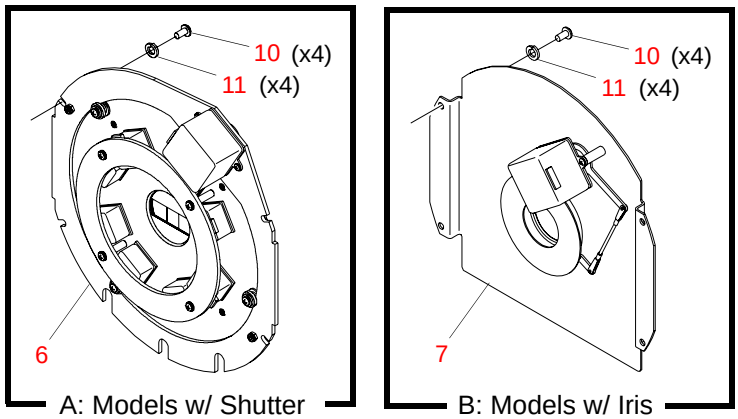
Front Head Assembly

21.9664.1001.02 (TS) Rev B
21.9664.1001.03 (TI) Rev B
21.9664.1001.12 (AS) Rev B
21.9664.1001.13 (AI) Rev B

Refer to Figure 3-12.

No.	Item	Qty.	UM.	Description
1	07.5049.0001	1	EA	LANYARD, NYLON COATED 8" LG
2	21.9663.1003	1	EA	ASSY, EDGE, ZOOM & COLOR
3	21.9664.1033	1	EA	ASSY, SIDE RAIL, PULLEY
4	21.9664.1034	1	EA	ASSY, SIDE RAIL, SENSOR
5	21.9664.1200	1	EA	ASSY, GOBO BULKHEAD, INCANDESCENT (**TI/TS ONLY**)
	21.9664.1600	1	EA	ASSY, GOBO/DIMMER BULKHEAD, ARC (**AI/AI ONLY**)
6	21.9663.1350	1	EA	ASSY, SHUTTER 6 ROLLERS (**TS/AS ONLY**)
7	21.9663.1400	1	EA	ASSY, IRIS (**TI/AI ONLY**)
8	53.6552.0002	4	EA	SCREW, 8-32 X 1/2" PFB
9	53.2004.0002	4	EA	NUT, 8-32 KEPS ZINC PLATE
10	53.6627.0001	12	EA	SCREW, 10-32 X 5/8" PPB
11	55.2179.0006	3	EA	SADDLE, WIRE BLIND HOLE 0.79"
12	55.3303.0010	12	EA	WASHER, #10 0.438" OD 0.040" THK SPLIT LOCK SS

Front Head Assembly (continued)



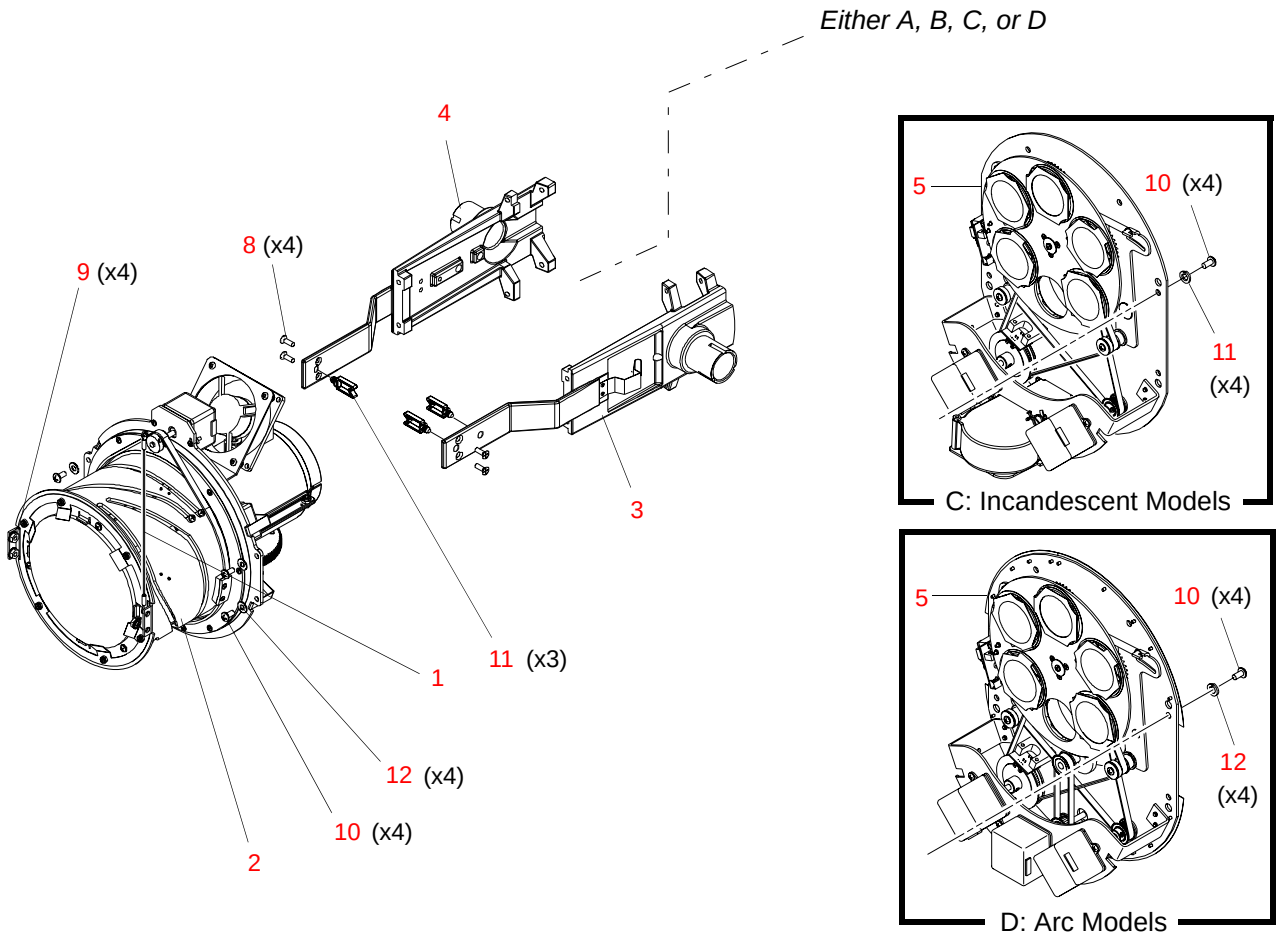


Figure 3-12: Front Head Assembly

Edge Control, Zoom, Dimmer & Color Assembly

21.9663.1003 Rev E

Refer to Figure 3-13.

No.	Item	Qty.	UM.	Description
1	10.9663.1039	1	EA	SUPPORT, AXIAL FAN
2	10.9663.1755	3	EA	ROLLER, BARREL
3	10.9663.1756	6	EA	ROLLER, LENS
4	10.9663.1757	1	EA	CLAMP, BELT BASE
5	10.9663.1758	1	EA	BELT CLAMP
6	10.9663.1767	1	EA	ZOOM TEFLON SPACER
7	10.9663.1790	1	EA	BELT PULLEY, GT 3MM PITCH 16 GROOVES
8	12.9663.1754	1	EA	MACHINED EXTRUSION, OUTER BARREL ZOOM
9	21.9663.1500	1	EA	ASSY, COLOR CHANGER
10	21.9663.1760	1	EA	ASSY, LENS #6
11	21.9663.1770	1	EA	ASSY, LENS #7
12	21.9663.1780	1	EA	ASSY, LENS #8
13	23.9663.2009	1	EA	ASSY, FAN
14	44.9663.1766	1	EA	MOTOR, 17 1.24" SHAFT 11.8MH 5.5 OHM
15	53.2003.0001	2	EA	NUT, 4-40 KEP ZINC PLATED
16	53.2202.0006	4	EA	NUT, 6-32 HEX SS NYLON INSERT
17	53.5506.0750	6	EA	SCREW, 6-32 X 3/4 " PPSS
18	55.5559.0250	2	EA	SCREW, 6-32 X 1/4" SET CONE (added 08-28-03)
19	53.5604.0437	2	EA	SCREW, 4-40 X 7/16"LG PPSS BLACK
20	53.5606.0375	7	EA	SCREW, 6-32 X 3/8 " PPSS BLACK
21	53.6558.0003	2	EA	SCREW, 6-32 X 3/8" PPZ PLASTIC THREAD ROLLING
22	53.6567.0001	2	EA	SCREW, 4-40 X 1/2" PPZ
23	54.2048.0002	1	EA	BELT, TIMING HTD 3MMPITCH 195 GROOVE 6MMWIDE
24	55.3301.0006	2	EA	WASHER, #6 FLAT SS
25	55.3303.0006	3	EA	WASHER, #6 LOCK INT. TOOTH SS
26	55.6588.0003	3	EA	SPACER, 1/4"RND #6 THRU 1/8"LG .140"ID ZINC PLT BRS

Edge Control, Dimmer & Color Assembly (continued)

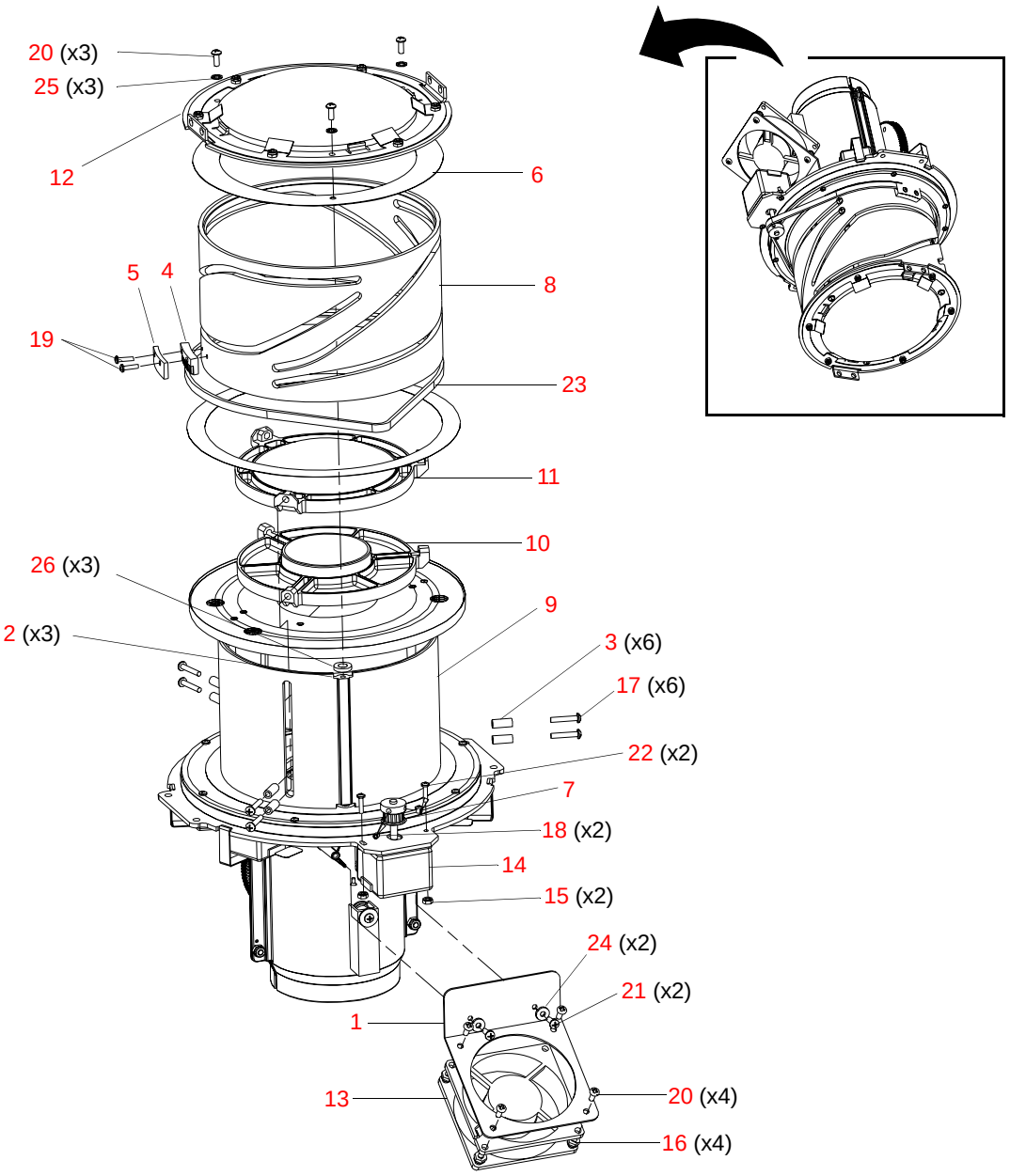


Figure 3-13: Edge Control, Dimmer & Color Assembly

Color Changer Assembly

21.9663.1500 Rev U

Refer to Figure 3-14.

No.	Item	Qty.	UM.	Description
1	04.9663.1524	1	EA	LABEL, MAGENTA MOTOR
2	04.9663.1525	1	EA	LABEL, BLUE MOTOR
3	04.9663.1526	1	EA	LABEL, AMBER MOTOR
4	04.9663.1527	1	EA	LABEL, DIFFUSER MOTOR
5	10.9663.3505	4	EA	DRIVE RING, COLOR SYSTEM LAYER, PLASTIC
6	10.9663.1506	1	EA	DIFFUSER COVER PLATE
7	10.9663.1507	2	EA	COLOR SEPERATOR
8	10.9663.1508	1	EA	MOTOR MOUNT PLATE
9	10.9663.1509	1	EA	COLOR COVER PLATE, LINER SHEET
10	10.9663.1510	1	EA	DIFFUSER COVER PLATE LINER SHEET
11	10.9663.1511	3	EA	COLOR SPACER 1
12	12.9663.1512	1	EA	DRIVE RING LOCATOR, MACHINED
13	10.9663.1514	3	EA	COLOR SPACER 2
14	10.9663.1515	1	EA	DIFFUSER SPACER 1
15	10.9663.1516	1	EA	DIFFUSER SPACER 2
16	10.9663.1518	4	EA	COLOR MOTOR MOUNT CLIP
17	10.9663.1521	1	EA	COLOR COVER PLATE, LINER SHEET
18	10.9663.1522	1	EA	DIFFUSER COVER PLATE, LINER SHEET
19	10.9663.1532	3	EA	RING SPACER
20	10.9663.1755	3	EA	ROLLER, BARREL
21	10.9663.1767	1	EA	ZOOM TEFLON SPACER
22	12.9663.1752	1	EA	MACHINED EXTRUSION, INNER BARREL ZOOM
23	44.9663.1539	4	EA	MOTOR SIZE 14, 10.8MH, 10.1 OHM WITH SPUR GEAR
24	21.9663.1534	1	EA	ASSY, COVER PLATE
25	21.9663.1538.01	2	EA	ASSY, MAGENTA COLOR FILTER
26	21.9663.1538.02	2	EA	ASSY, BLUE COLOR FILTER
27	21.9663.1538.03	2	EA	ASSY, AMBER COLOR FILTER
28	21.9663.1538.04	2	EA	ASSY, DIFFUSER GLASS RIGHT
29	21.9663.1710	1	EA	ASSY, BARREL
30	53.2002.0003	4	EA	NUT, 6-32 HEX ZINC NYLON INSERT

No.	Item	Qty.	UM.	Description
31	53.2200.0004	8	EA	NUT, 4-40 KEPS SS
32	53.5636.0375	3	EA	SCREW, 6-32 X 3/8 " PFSS BLACK
33	53.6556.0001	8	EA	SCREW, 4-40 X 3/4"LG PPZ
34	55.6588.0003	3	EA	SPACER, 1/4"RND #6 THRU 1/8"LG .140"ID ZINC PLT BRS
35	10.9663.1537	1	EA	DRIVE RING LOCATOR BEARING

Color Changer Assembly (continued)

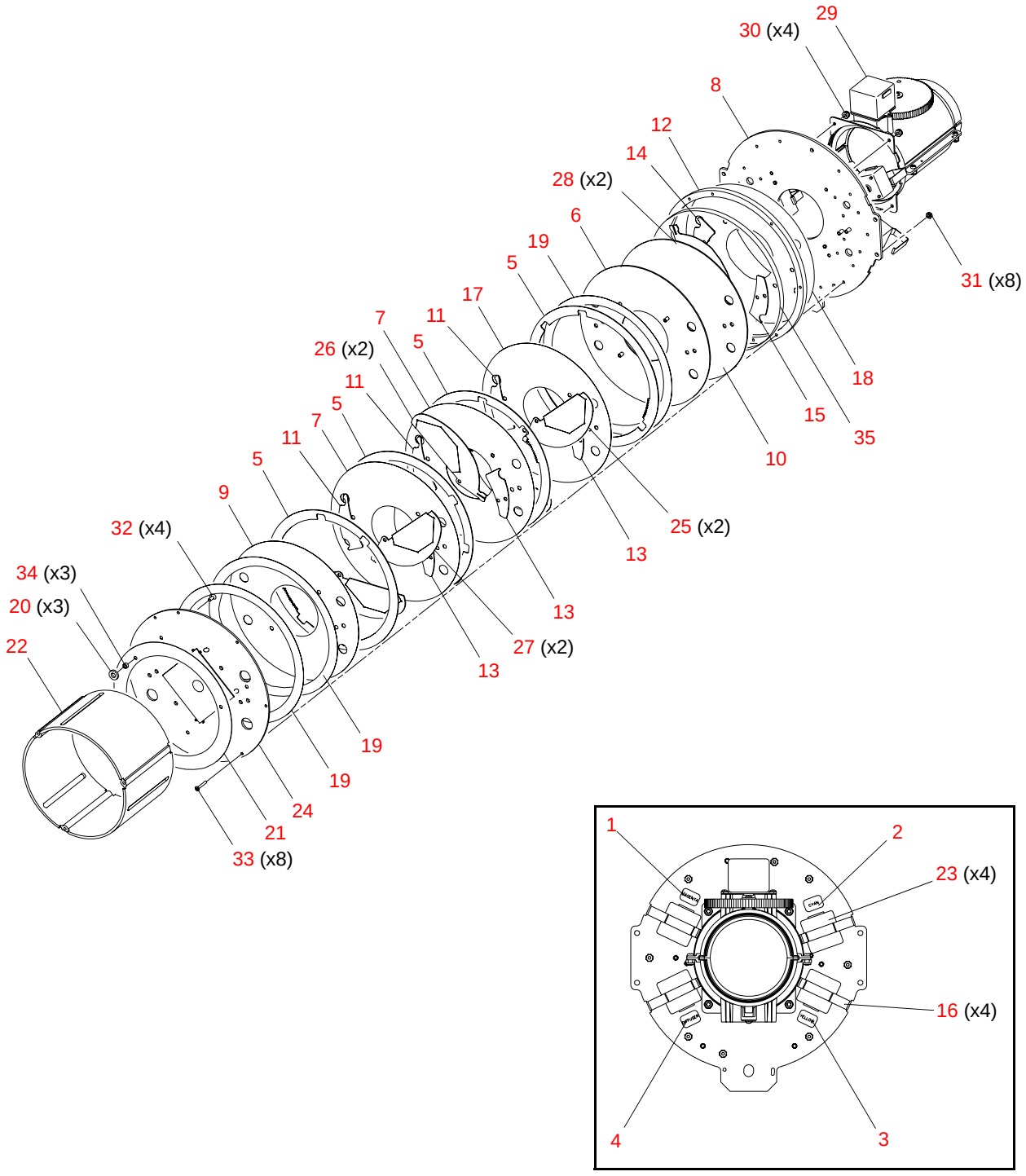


Figure 3-14: Color Changer Assembly

Edge Barrel Assembly

21.9663.1710 Rev C

Refer to Figure 3-15.

No.	Item	Qty.	UM.	Description
1	10.9663.1701	2	EA	BARREL, HALF OUTER LENS EDGE SYSTEM
2	10.9663.1708	1	EA	EDGE GEAR/CAM, 8 ELEMENT SYSTEM
3	10.9663.1711	2	EA	BARREL, HALF INNER LENS EDGE SYSTEM
4	10.9663.1737	1	EA	EDGE, LIGHT BAFFLE
5	21.9663.1722	1	EA	ASSY, EDGE MOTOR
6	42.9663.1728	1	EA	LENS #1
7	42.9663.1731	1	EA	LENS #4
8	42.9663.1732	1	EA	LENS #5
9	42.9663.1736	1	EA	ASSY, LENS #2 & #3
10	53.2202.0006	4	EA	NUT, 6-32 HEX SS NYLON INSERT
11	53.6558.0001	4	EA	SCREW, 6-32 X 3/8" PPZ
12	53.6558.0003	4	EA	SCREW, 6-32 X 3/8" PPZ PLASTIC THREAD ROLLING
13	55.2123.0012	1	EA	WASHER, WAVE SPRING .484"OD .397"ID .009"THK CSTL
14	55.6636.0003	2	EA	WASHER, .562"OD .156"ID .046"THK #6 FLAT ZINC PLT

Barrel Assembly (continued)

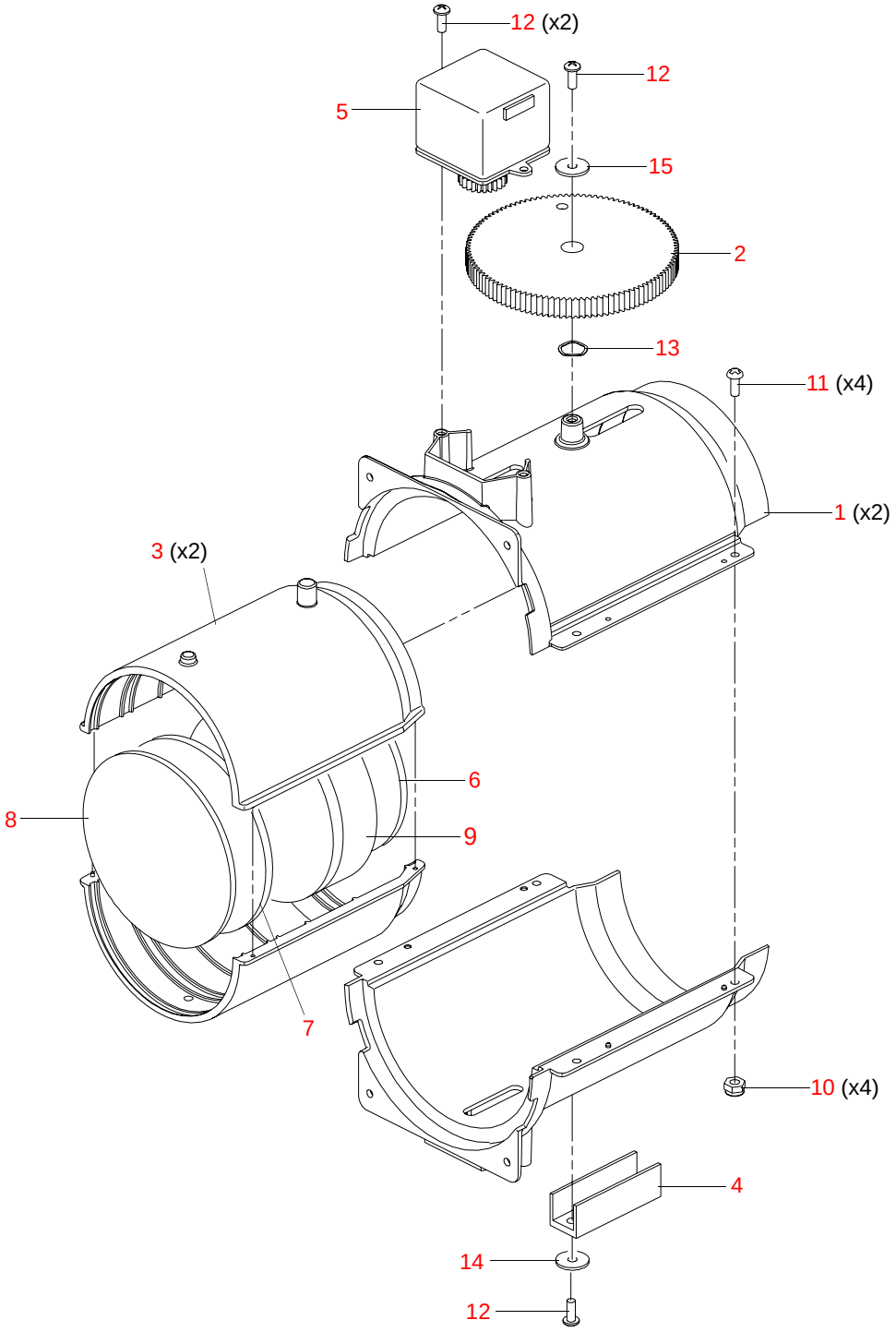


Figure 3-15: Edge Barrel Assembly

Lens #8 Assembly

21.9663.1780 Rev B

Refer to Figure 3-16.

No.	Item	Qty.	UM.	Description
1	10.9663.1782	1	EA	RING, RETAINING FRONT LENS
2	10.9663.1781	1	EA	BULKHEAD, FRONT -LENS #8 ASSY
3	42.9663.1735	1	EA	LENS #8
4	53.2202.0004	6	EA	NUT, 4-40 HEX SS NYLON INSERT
5	53.6559.0001	6	EA	SCREW, 4-40 X 1/4" PFZ

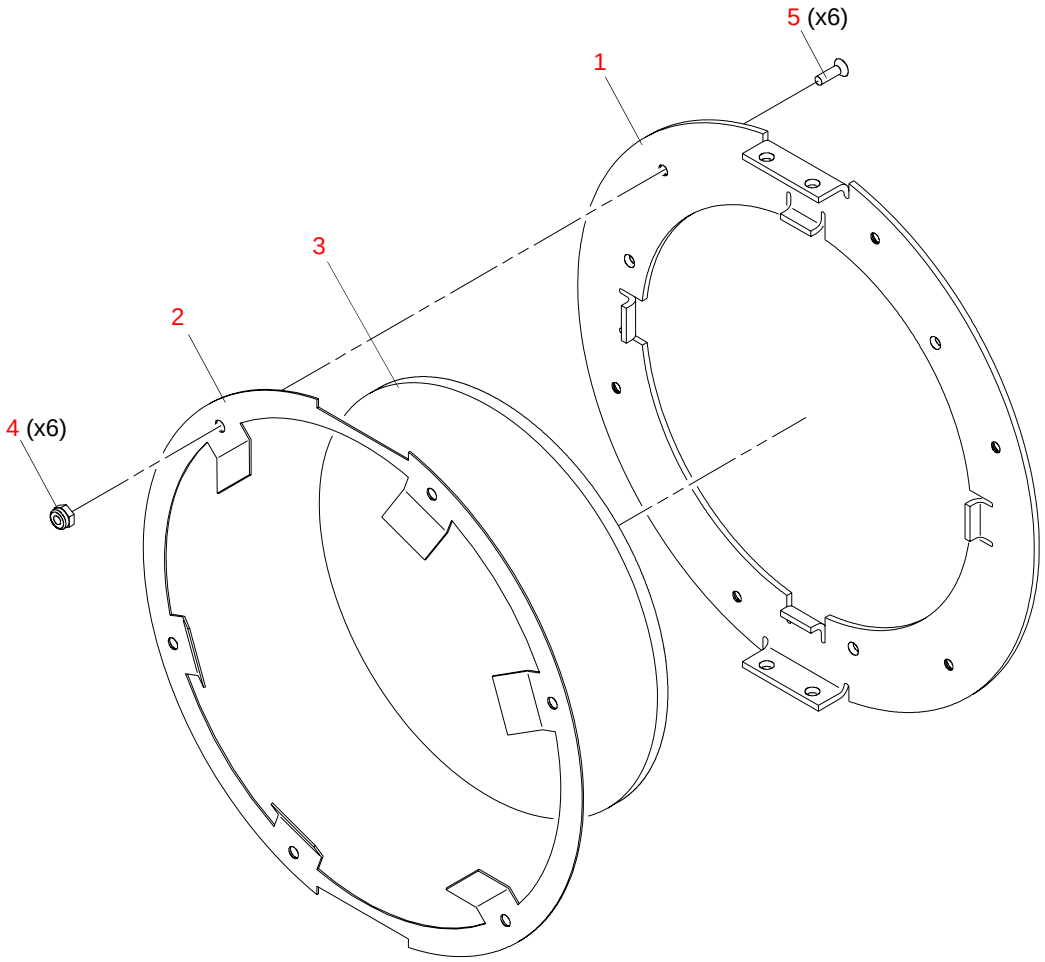


Figure 3-16: Lens #8 Assembly

Pulley Side Rail Assembly

21.9664.1033 Rev A

Refer to Figure 3-17.

No.	Item	Qty.	UM.	Description
1	10.9663.1026	1	EA	LATCH, SPRING
2	12.9663.2025	1	EA	RAIL, SIDE MACHINED LONG TILT TUBE
3	53.2002.0004	1	EA	NUT, 6-32 ACORN THREAD LOCKING SS
4	53.5636.0500	1	EA	SCREW, 6-32 X 1/2" PFSS BLACK
5	53.6530.0009	2	EA	RIVET, 1/8"OD POP .126-.187GL STL BODY STL MNDRL DOME
6	55.2178.0002	1	EA	CABLE ANCHOR MOUNT, #10 SCREW MOUNTING

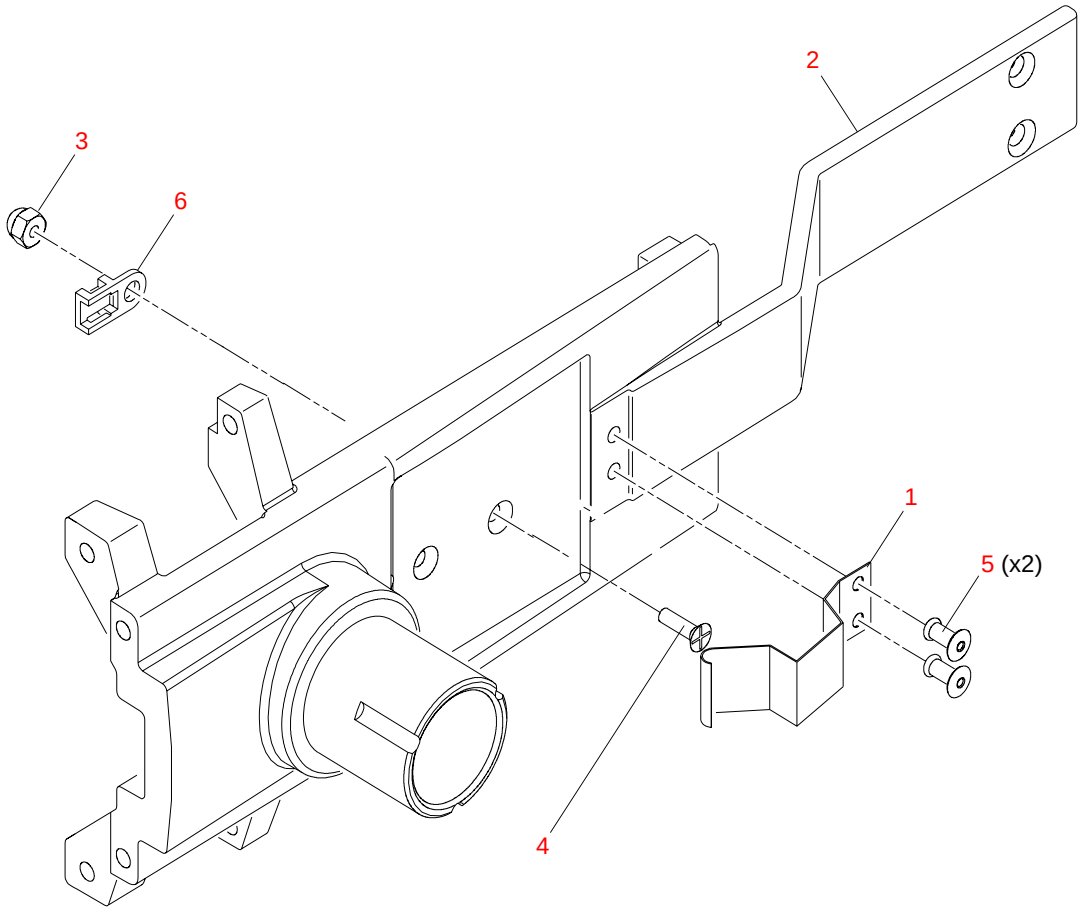


Figure 3-17: Pulley Side Rail Assembly

Sensor Side Rail Assembly

21.9664.1034 Rev B

Refer to Figure 3-18.

No.	Item	Qty.	UM.	Description
1	10.9663.1026	1	EA	LATCH, SPRING
2	12.9663.2029	1	EA	RAIL, SIDE MACHINED SHORT TILT TUBE
3	53.2002.0004	1	EA	NUT, 6-32 ACORN THREAD LOCKING SS
4	53.5636.0625	1	EA	SCREW, 6-32 X 5/8" PFSS BLACK
5	53.6530.0009	2	EA	RIVET, 1/8"OD POP .126-.187GL STL BODY STL MNDRL DOME
6	55.6623.0004	1	EA	WASHER, #10 FLAT SS, 0.203ID, 0.625OD, 0.050THK

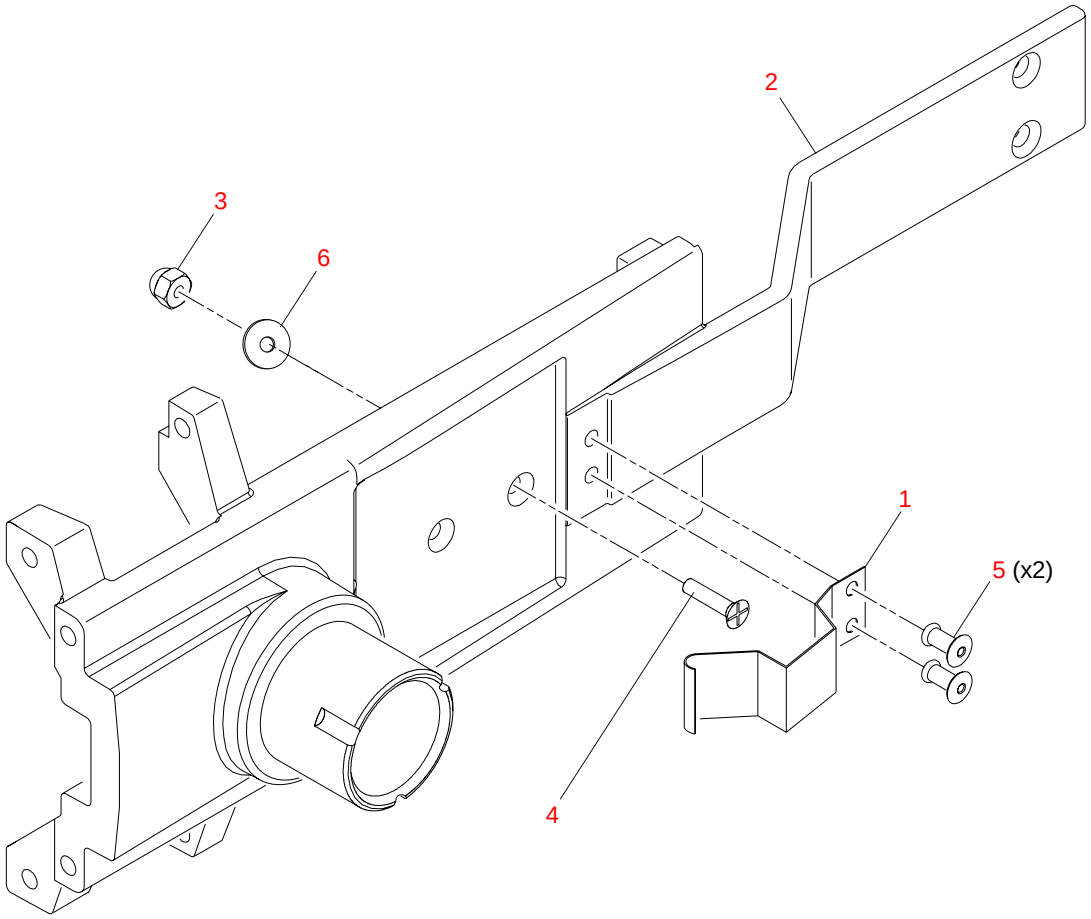


Figure 3-18: Sensor Side Rail Assembly

Incandescent Gobo Wheel Assembly

21.9664.1200 (TS/TI/TSD/TID) Rev A

Refer to Figure 3-19.

No.	Item	Qty.	UM.	Description
1	10.9663.1212	1	EA	PULLEY, MOTOR GOBO
2	10.9663.1217	1	EA	PULLEY, GOBO DRIVE MOTOR MOUNTED
3	10.9663.1228	1	EA	PLATE, GOBO IDLER MOUNT PLATE
4	10.9663.1229	1	EA	PLATE, WHEEL IDLER MOUNT
5	10.9663.1239	2	EA	MOUNT, SENSOR BOARD
6	10.9663.1241	2	EA	PULLEY, IDLER TEFLON
7	10.9663.1242	2	EA	SPACER, PIVOT BELT ADJUST
8	10.9663.2214	1	EA	SHAFT, ROTATING GOBO
9	21.9665.1201	1	EA	ASSY, GOBO WHEEL
10	22.9663.1226	1	EA	ASSY, GOBO BULKHEAD
11	23.9663.1248.01	1	EA	ELEC ASSY, TEMPERATURE SENSOR, INCANDESCENT MODELS
12	24.9663.3230	1	EA	PCB ASSY, WHEEL SENSOR
13	24.9663.3231	1	EA	PCB ASSY, INDEX SENSOR
14	44.9663.1202	2	EA	MOTOR, 17 2.42" SHAFT 11.8MH 5.5 OHM
15	53.2003.0001	2	EA	NUT, 4-40 KEP ZINC PLATED
16	53.2200.0004	1	EA	NUT, 4-40 KEPS SS
17	53.5560.0250	4	EA	SCREW, SET, 8-32 X 1/4" L
18	53.6524.0002	4	EA	SCREW, 6-32 X 5/16", PPB
19	53.6530.0022	2	EA	RIVET, 1/8" CSK, 0.25 GRP
20	53.6530.0023	1	EA	RIVET, 1/8" IN OD POP, 0.376 - 0.500" GRP DOME HD AL
21	53.6537.0001	1	EA	SCREW, 4-40 X 5/8", PPB
22	53.6543.0001	1	EA	SCREW, 6-32 X 3/8", PPB
23	53.6558.0015	1	EA	SCREW, 6-32 X 3/8", PPB, SEMS EXTW
24	53.6581.0002	2	EA	SCREW, 4-40 X 1-3/8", PFZ
25	53.6598.0312	4	EA	SCREW, 4-40 X 5/16" PFB
26	53.6600.0001	3	EA	SCREW, 4-40 X 5/16" PPB
27	53.6614.0001	2	EA	SCREW, 6-32 X 5/8, PPB
28	54.2045.0002	1	EA	BELT, TIMING
29	54.9663.1220	1	EA	BELT, GOBO DRIVE
30	55.2123.0003	2	EA	WASHER, WAVE SPRING

No.	Item	Qty.	UM.	Description
31	55.3301.0006	1	EA	WASHER, #6 FLAT, SS
32	55.6506.0010	1	EA	SPACER, 0.250" OD X 0.140" ID X 0.375" LG, ALUM
33	55.6506.0010	1	EA	WASHER, #6 LOCK INTERNAL TOOTH
34	55.6568.0061	2	EA	SPRING, EXTENSION, 0.250" OD, 2.00" LONG
35	55.6621.0001	1	EA	WASHER, #4 FLAT ZINC
36	55.6677.0039	2	EA	WASHER, FLAT, 0.438" OD, 0.219" ID 0.04" THK
37	55.6677.0040	4	EA	WASHER, FLAT 0.624" OD, 0.145" ID, 0.03" THK
38	55.6706.0001	1	EA	GROMMET, 9/32" ID, 9/16" OD 1/4T SI
39	55.6818.0002	1	EA	STANDOFF, 45 DEGREE NYLOCK KURLY-LOK

Incandescent Gobo Wheel Assy (continued)

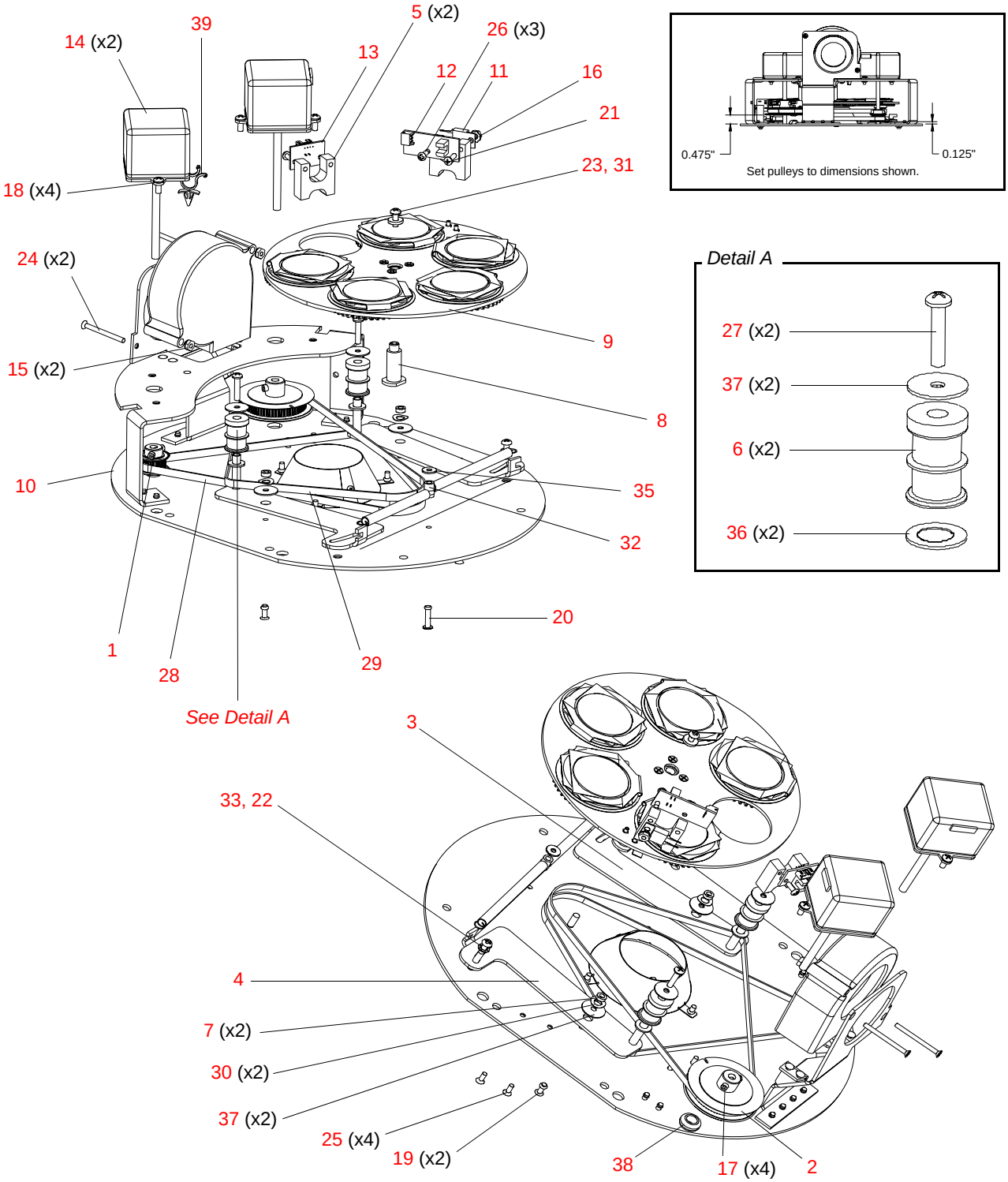


Figure 3-19: Incandescent Gobo Wheel Assembly

Temperature Sensor Electrical Assembly

23.9663.1248.01 (TS) Rev A
23.9663.1248.11 (AS) Rev A

Refer to Figure 3-20.

No.	Item	Qty.	UM.	Description
1	23.9663.2008	1	EA	ASSY, FAN (**TI/TS ONLY**)
	- 40.7140.0001	1	EA	BLOWER, CENTRIFUGAL 24VDC 9CFM 3" X 3"
	- 52.8347.0001	2	EA	CONTACT, 24-30AWG MALE CRIMP
2	52.6523.0004	1	EA	CONN, HOUSING 4POS PLUG SHROUDED WIRE TO WIRE
3	52.8347.0001	2	EA	CONTACT, 24-30AWG MALE CRIMP
4	55.2198.0001	.17	FT	HEAT SHRINK 1/8" BLACK
5	63.2047.0001	1	EA	THERMOSTAT, 100 DEG C PCB MOUNT CLOSE ON RISE
6	73.3524.0002	2.5	FT	WIRE 24AWG 300V 105C PVC RED UL1007

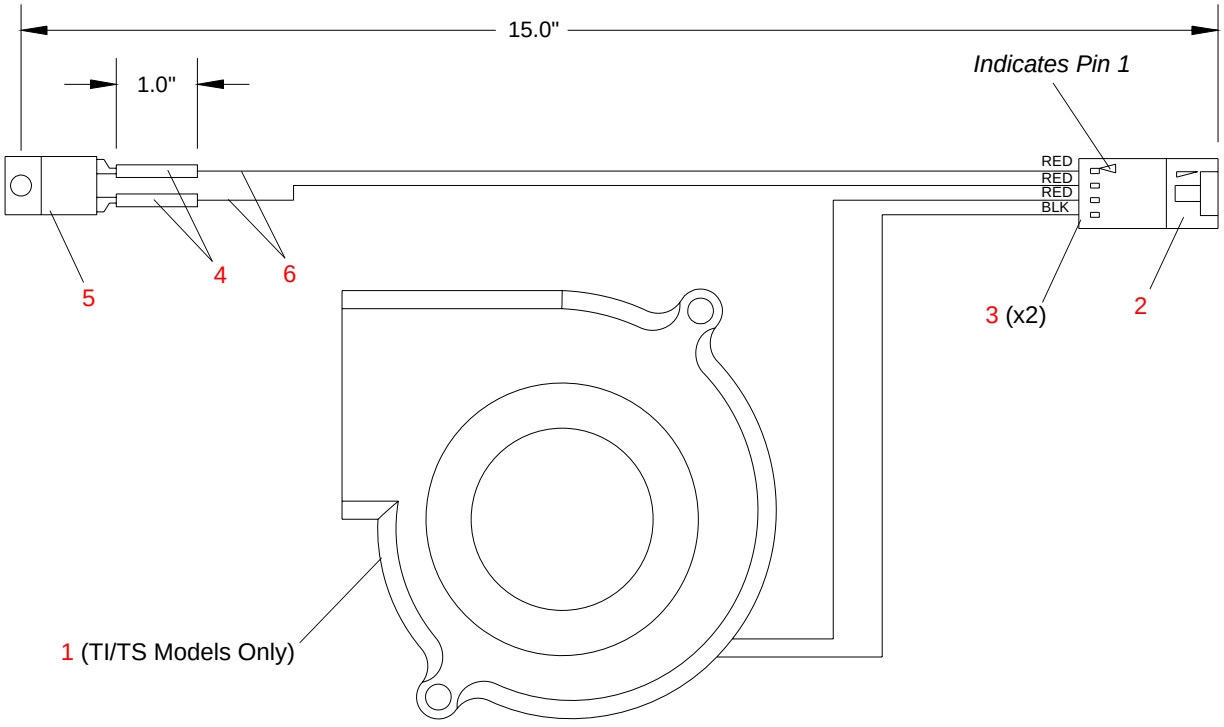


Figure 3-20: Temperature Sensor Electrical Assembly

Arc Gobo/Dimmer Bulkhead Assembly

21.9664.1600 (AI/AS) Rev A

Refer to Figure 3-21.

No.	Item	Qty.	UM.	Description
1	10.9663.1212	2	EA	PULLEY, MOTOR GOBO
2	10.9663.1217	1	EA	PULLEY, GOBO DRIVE
3	10.9663.1228	1	EA	PLATE, GOBO IDLER MOUNT PLATE
4	10.9663.1229	1	EA	PLATE, WHEEL IDLER MOUNT
5	10.9663.1239	2	EA	MOUNT, SENSOR BOARD
6	10.9663.1241	2	EA	PULLEY, IDLER TEFLON
7	10.9663.1242	2	EA	SPACER, PIVOT BELT ADJUST
8	10.9663.1621	1	EA	PULLEY, W/FLANGES 26 GROOVE
9	10.9663.1625	1	EA	SHAFT, DIMMER 0.250" OD
10	10.9663.1630	2	EA	SEAL, COVER LONG
11	10.9663.1631	2	EA	SEAL, COVER SHORT
12	10.9663.1632	2	EA	PLATE, COVER SEAL LONG
13	10.9663.1633	2	EA	PLATE, COVER SEAL SHORT
14	10.9663.1635	1	EA	SHAFT, SUPPORT, DIMMER
15	10.9663.2214	1	EA	SHAFT, ROTATING GOBO
16	21.9665.1201	1	EA	ASSY, GOBO WHEEL
17	22.9663.1232	1	EA	FAB ASSY, DIMMER/GOBO BULKHEAD
18	22.9663.1629	1	EA	GLASS, DIMMER WHEEL
19	23.9663.1248.11	1	EA	ELEC ASSY, TEMPERATURE SENSOR, ARC MODELS
20	24.9663.3230	1	EA	PCB ASSY, WHEEL SENSOR
21	24.9663.3231	1	EA	PCB ASSY, INDEX SENSOR
22	44.9663.1202	3	EA	MOTOR, 17 2.42" SHAFT 11.8 MH
23	53.2002.0001	1	EA	NUT, 6-32 KEP ZINC PLATED
24	53.2200.0004	1	EA	NUT, 4-40 KEPS SS
25	53.5558.0125	2	EA	SCREW, 8-32 X 0.125" SET SS
26	53.5560.0250	8	EA	SCREW, SET 8-32 X 1/4" L
27	53.6524.0002	6	EA	SCREW, 6-32 X 5/16", PPB
28	53.6530.0022	2	EA	RIVET, 1/8" CSK, 0.250 GRP
29	53.6530.0023	1	EA	RIVET, 1/8" OD POP .376-500 GRP DOME HD AL
30	53.6534.0001	18	EA	RIVET, 3/32" OD POP 3/32’ GRIP

No.	Item	Qty.	UM.	Description
31	53.6537.0001	1	EA	SCREW, 4-40 X 5/8" PPB
32	53.6543.0001	1	EA	SCREW, 6-32 X 3/8" PPB
33	53.6558.0015	1	EA	SCREW, 6-32X 3/8" PPB
34	53.6598.0312	7	EA	SCREW, 4-40 X 5/16" PFB
35	53.6600.0001	3	EA	SCREW, 4-40 X 5/16" PPB
36	53.6614.0001	2	EA	SCREW, 6-32 X 5/8" PPB
37	53.6682.0002	2	EA	SCREW, 4-40 X 1/4" LG PPZ SEMS-EXT
38	54.1259.0002	2	EA	FLANGE, BEARING, 1/4" SHAFT
39	54.2045.0002	1	EA	BELT, TIMING
40	54.2050.0001	1	EA	BELT, TIMING MXL .080" PITCH 93 TEETH 1/4" WD SILICONE
41	54.9663.1220	1	EA	BELT, GOBO DRIVE
42	55.2123.0003	2	EA	WASHER, WAVE SPRING
43	55.3301.0006	1	EA	WASHER, #6 FLAT, SS
44	55.6506.0010	1	EA	SPACER, 0.250" OD X 0.140" ID X 0.375" LG ALUM
45	55.6506.0029	1	EA	SPACER, 9/32" RND 0.312" LG 0.253" THRU AL
46	55.6512.0001	2	EA	WASHER, #4 SPLIT LOCK
47	55.6538.0001	1	EA	WASHER, #6 LOCK INTERNAL TOOTH
48	55.6568.0061	2	EA	SPRING, EXTENSION, 0.250" OD X 2.00" LONG
49	55.6621.0001	1	EA	WASHER, #4 FLAT ZINC
50	55.6659.0007	2	EA	STANDOFF, 1/4" HEX 6-32 0.250" LG MF ALUM
51	55.6677.0039	2	EA	WASHER, FLAT, 0.438" OD, 0.219" ID 0.04" THK
52	55.6677.0040	4	EA	WASHER, FLAT 0.624" OD, 0.145" ID, 0.03" THK
53	55.6706.0001	1	EA	GROMMET, 9/32" ID, 9/16" OD 1/4T SI
54	55.6818.0002	1	EA	STANDOFF, 45 DEGREE NYLOCK KURLY-LOK

Arc Gobo/Dimmer Bulkhead (continued)

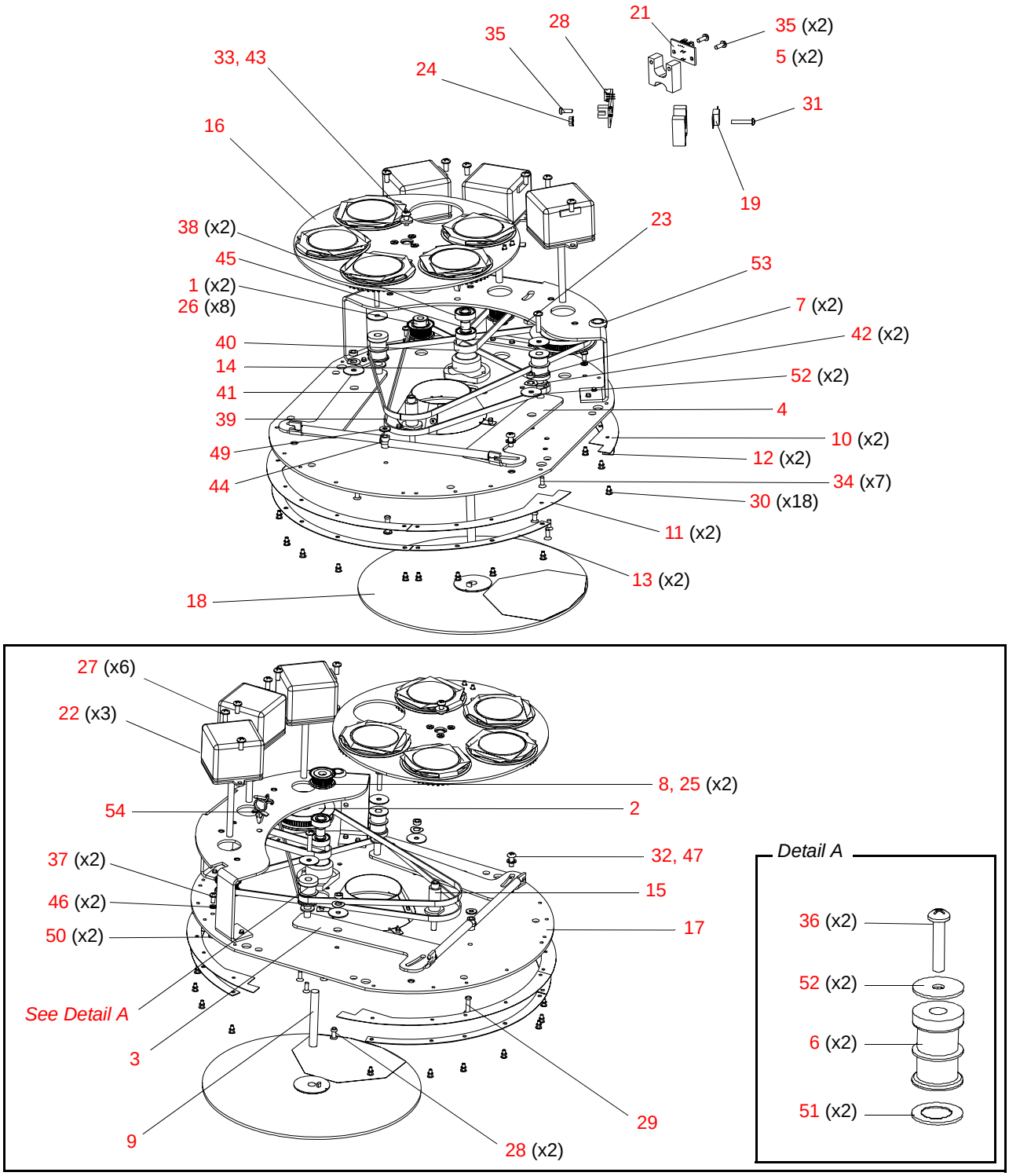


Figure 3-21: Arc Gobo/Dimmer Bulkhead Assembly

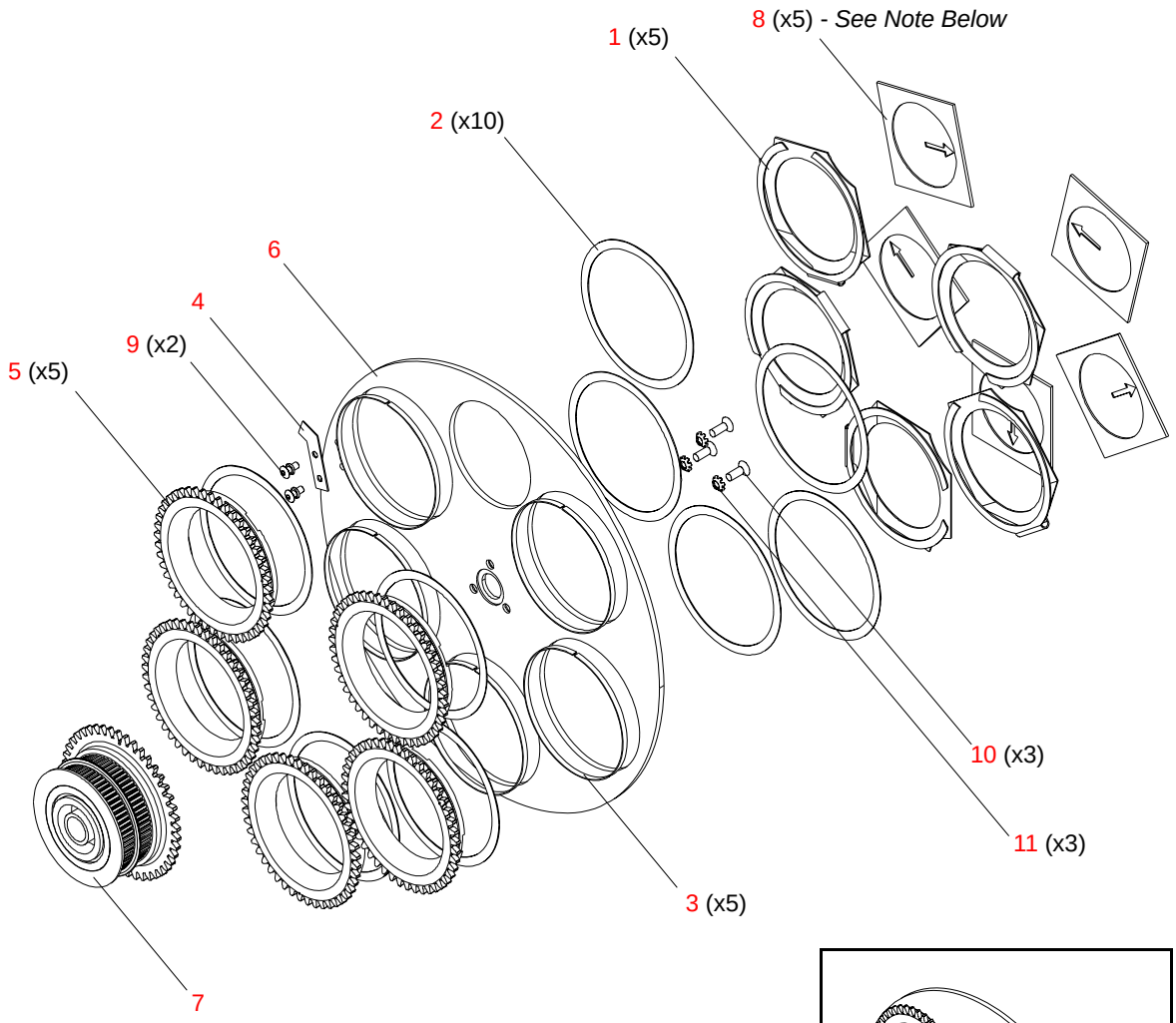
Gobo Wheel Assembly

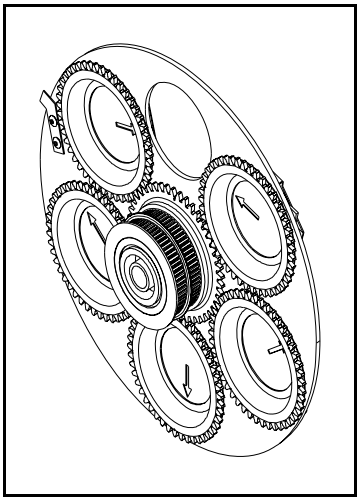
21.9665.1201 Rev A

Refer to Figure 3-22.

No.	Item	Qty.	UM.	Description
1	10.9663.1210	5	EA	CLIP, RETAINING
2	10.9663.1211	10	EA	SPACER, TEFLON, GOBO GEAR
3	10.9663.1240	5	EA	BEARING, GOBO WHEEL BORE
4	10.9663.1247	1	EA	TAB, GOBO WHEEL SENSOR
5	10.9663.2203	5	EA	GEAR, PLANET, CAST
6	10.9663.2204	1	EA	WHEEL, ROTATING GOBO
7	21.9665.1222	1	EA	PULLEY ASSY, GOBO WHEEL
8	41.6010.0001	5	EA	GOBO ASSY, E-SIZE (NOTE: PATTERNS ARE SOLD SEPARATELY AND ARE NOT INCLUDED WITH THE FIXTURE.)
9	53.6534.0001	2	EA	RIVET, 3/32" OD, 3/32 GRIP RANGE, ALUM
10	53.6598.0312	3	EA	SCREW, 4-40 X 5/16" PFB
11	55.6504.0004	3	EA	WASHER, #4 LOCK CSK EXT TOOTH

Gobo Wheel Assembly (continued)





Note: Patterns are sold separately and are not included with the fixture.

Figure 3-22: Gobo Wheel Assembly

Gobo Wheel Pulley Assembly

21.9665.2222 Rev B

Refer to Figure 3-20.

No.	Item	Qty.	UM.	Description
1	10.9663.1206	1	EA	FLANGE, MIDDLE
2	10.9665.2210	1	EA	SPACER 1, ROTATING GOBO WHEEL
3	10.9665.2211	1	EA	SPACER 2, ROTATING GOBO WHEEL
4	12.9665.2205	1	EA	PULLEY, GOBO WHEEL DRIVE
5	12.9665.2219	1	EA	SUN GEAR, MOLDED
6	54.1206.0060	1	EA	RETAINING RING, INTERNAL, 36.5MM BORE
7	54.1259.0020	1	EA	BEARING, 25MM ID, 37MM OD, 7MM WD
8	54.1259.0021	1	EA	BRG, FLANGED, 0.250" BORE, 0.500" OD
9	54.1259.0022	1	EA	BRG, FLANGED, 0.375" BORE, 0.875" OD

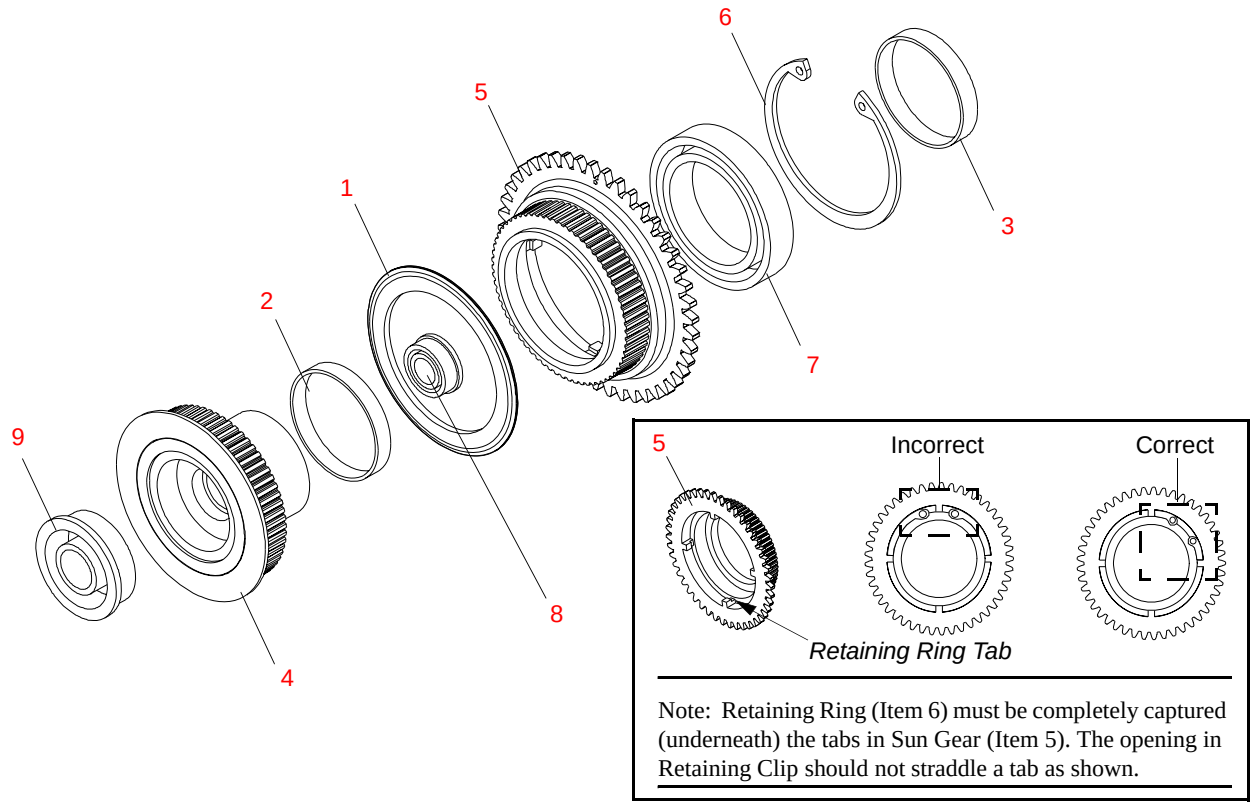


Figure 3-23: Gobo Wheel Pulley Assembly

Shutter 6 Rollers Assembly

21.9663.1350 Rev D

Refer to Figure 3-24.

No.	Item	Qty.	UM.	Description
1	10.9663.1311	2	EA	SEPARATOR, SHUTTER
2	10.9663.1313	1	EA	COVER, SHUTTER
3	10.9663.1314	8	EA	RACK, SHUTTER
4	10.9663.1320	8	EA	PAD, MOTOR
5	10.9663.1321	1	EA	CLAMP RING, MOTOR
6	10.9663.1325	6	EA	ROLLER, NYLON
7	10.9663.1327	1	EA	GEAR, SHUTTER ROTATE SECTOR
8	10.9663.1328	1	EA	BULKHEAD, SHUTTER MACHINED
9	10.9663.1330	1	EA	PINON, SHUTTER
10	10.9663.1380	4	EA	SPACER, SHUTTER
11	10.9663.1381	3	EA	STIFF SEPARATOR, SHUTTER
12	10.9663.1339.02	1	EA	DONUT, ANTI-REFLECTION, SHUTTER
13	10.9663.1351	1	EA	BASE PLATE, SHUTTER 6 ROLLERS
14	12.9663.1323	2	EA	BLADE, SHUTTER COATED SIDE A
15	12.9663.1324	2	EA	BLADE, SHUTTER COATED SIDE B
-	25.9663.2040	1	EA	CABLE ASSY, BEAM SHAPER HARNESS - **NOT SHOWN**
16	44.9663.1326	1	EA	MOTOR, 17 .53" SHAFT 11.8MH 5.5 OHM
17	44.9663.1351	8	EA	ASSY, SHUTTER MOTOR (changed 05-22-03)
18	53.2200.0006	1	EA	NUT, 6-32 KEPS SS
19	53.2202.0004	4	EA	NUT, 4-40 HEX SS NYLON INSERT
20	53.2202.0006	2	EA	NUT, 6-32 HEX SS NYLON INSERT
21	53.5638.0252	4	EA	SCREW, 6-32 X 1/4"LG PFS UNDERCUT HEAD
22	53.6523.0013	6	EA	SCREW, 6X32 3/8 LG PTB TRUSS HD BLK ZINC
23	53.6525.0001	4	EA	SCREW, 6-32 X 5/16" PPZ
24	53.6526.0001	2	EA	SCREW, 6-32 X 5/8" PPZ
25	53.6536.0001	2	EA	SCREW, 4-40 X 1/2" PFZ
26	53.6613.0001	1	EA	SCREW, 6-32 X 1/2" PPZ
27	55.2178.0002	1	EA	CABLE ANCHOR MOUNT, #10 SCREW MOUNTING
-	55.2180.0002	0.25	FT	SPIRAL WRAP, 3/8" OD TEFLON (**NOT SHOWN**)
28	55.3303.0006	4	EA	WASHER, #6 LOCK INT. TOOTH SS

No.	Item	Qty.	UM.	Description
29	55.6621.0001	4	EA	WASHER, #4 FLAT ZINC
30	55.6697.0020	2	EA	STANDOFF, 3/16" RND, 4-40, .375"LG, ZINC PLATED STEEL

Shutter Assembly (continued)

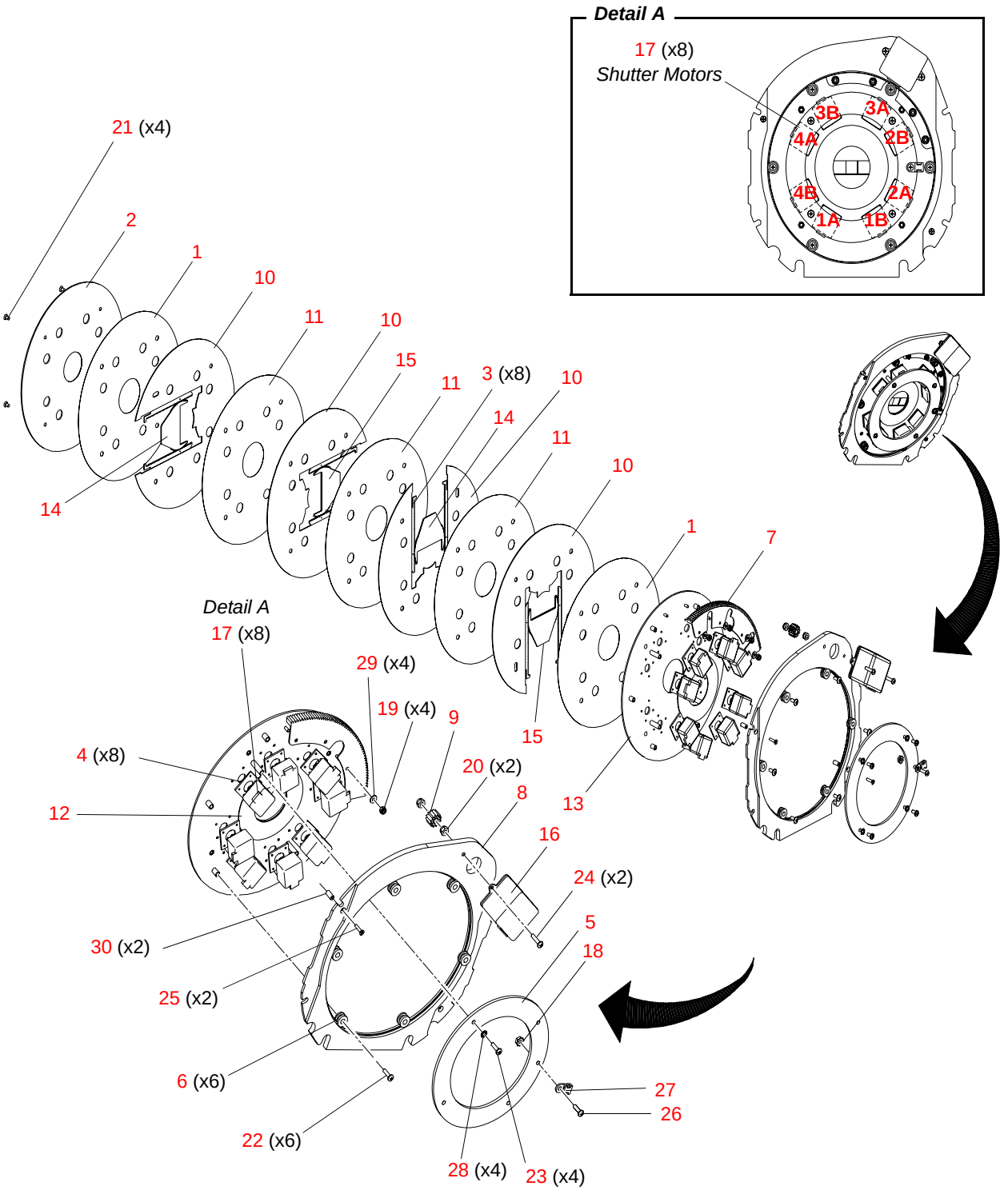


Figure 3-24: Shutter 6 Rollers Assembly

Beam-Size Iris Assembly

21.9663.1400 Rev E

Refer to Figure 3-25.

No.	Item	Qty.	UM.	Description
1	10.9663.1339.03	1	EA	DONUT, ANTI-REFLECTION IRIS
2	10.9663.1411	1	EA	BULKHEAD, IRIS
3	21.9663.1409	1	EA	ASSY, MOTOR ARM
	- 10.9663.1402	1	EA	ARM, MOTOR
	- 10.9663.1406	1	EA	BOSS, MOTOR ARM
	- 53.6659.0008	3	EA	SCREW, 2-56 X 3/16" PFZ
4	22.9663.1410	1	EA	IRIS, 67MM OD
5	44.9663.1326	1	EA	MOTOR, 17 .53" SHAFT 11.8MH 5.5 OHM
6	53.5560.0250	1	EA	SCREW, 8-32 X 1/4" SET CONE POINT
7	53.6513.0042	3	EA	SCREW, M2 X .4 X 4MM LG PFB METRIC
8	53.6543.0003	2	EA	SCREW, 6-32 X 3/16" PPB
9	53.6605.0200	1	EA	STUD, 2-56 X 2.0"LG FULL THREAD STAINLESS STEEL
10	54.1217.0005	2	EA	KWIK LINK, 2-56 SPRING STEEL
	55.6538.0005	4	EA	WASHER, TEFLON, .25" OD, .065" ID, .015" THK (**NOT SHOWN**)
11	55.6546.0004	1	EA	WASHER, TEFLON, .201 ID X .438 0D X .040 THK

Beam-Size Iris Assembly (continued)

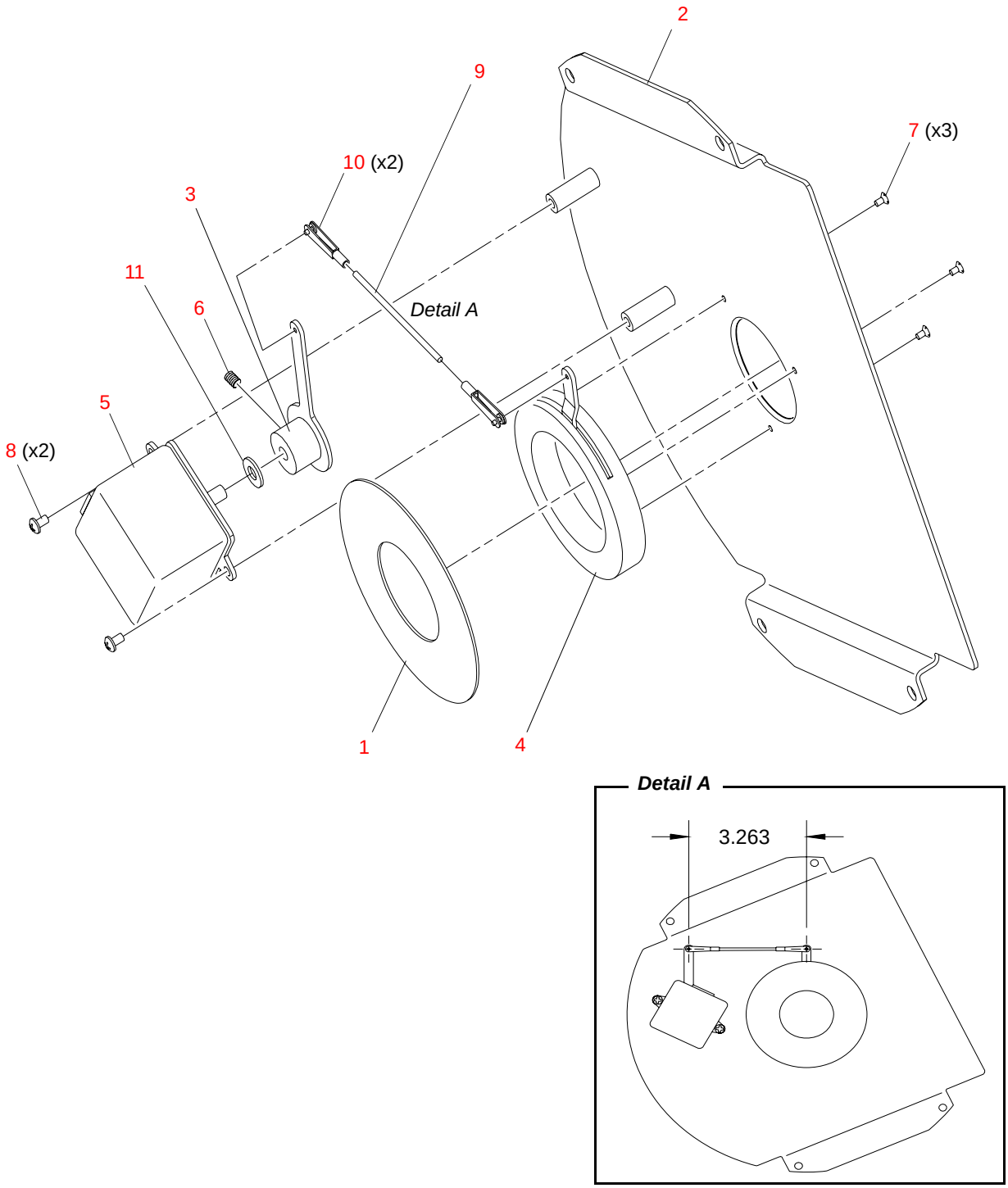


Figure 3-25: Beam-Size Iris Assembly

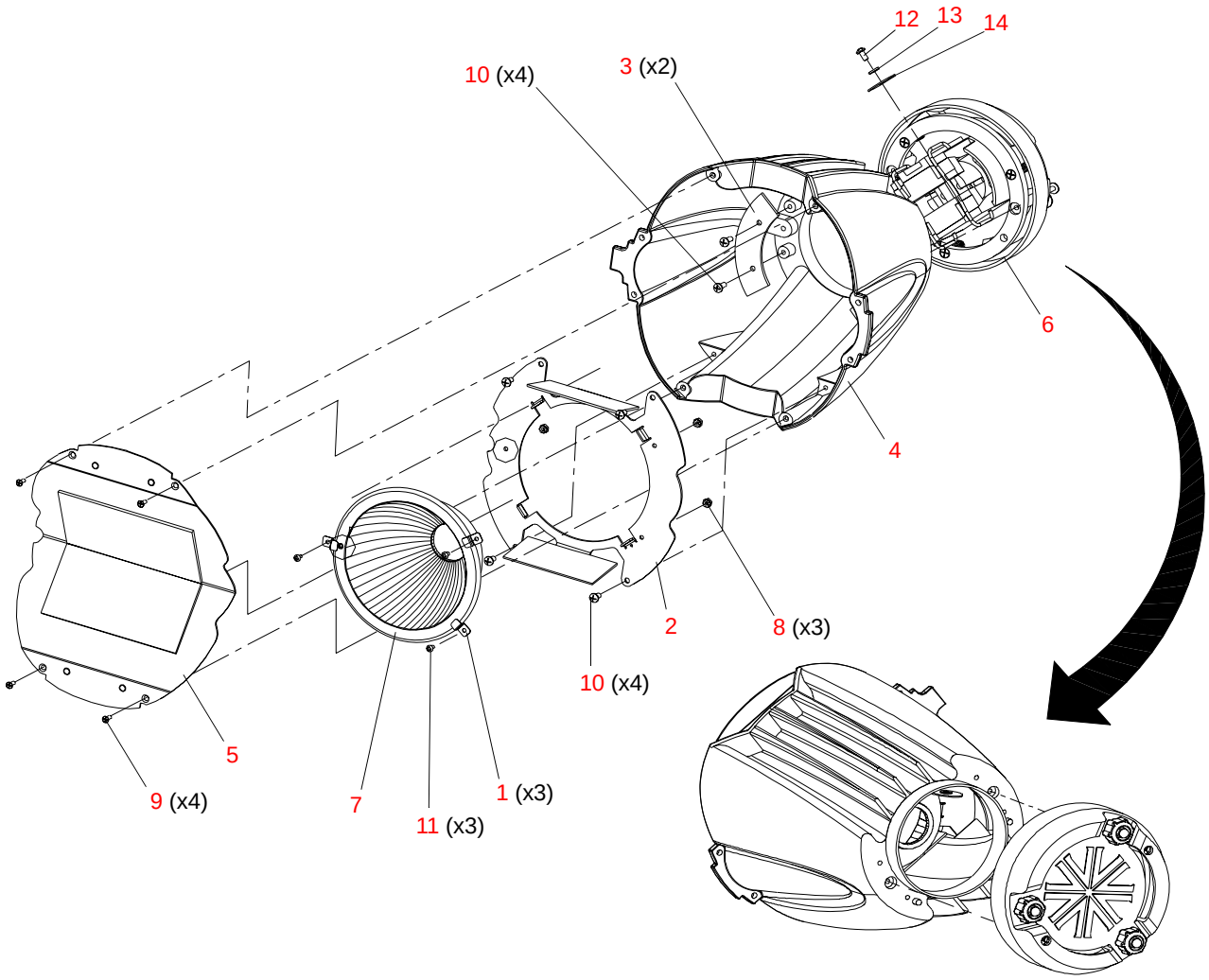
Rear Head Assembly

21.9664.1002.01 Rev A (TS/TI)
21.9664.1002.11 Rev A (AS/AI)

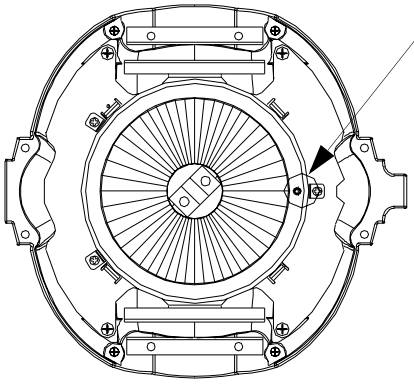
Refer to Figure 3-26.

No.	Item	Qty.	UM.	Description
1	10.9634.0100	3	EA	CLIP, MOUNTING, REFLECTOR
2	10.9663.1104	1	EA	REFLECTOR MOUNT
3	10.9663.1109	2	EA	COUNTERWEIGHT
4	12.9663.2023	1	EA	HEAD REAR CASTING, MACHINED
5	21.9663.1101.01	1	EA	ASSY, INCANDESCENT BULKHEAD (**TS/TI ONLY**)
	21.9663.1101.11	1	EA	ASSY, ARC BULKHEAD (**AS/AI ONLY**)
6	21.9664.1127.01	1	EA	ASSY, BACK CAP (**TS/TI ONLY**)
	21.9664.1127.11	1	EA	ASSY, BACK CAP (**AS/AI ONLY**)
-	25.9663.2033	REF	EA	CABLE ASSY, LAMP POWER INCANDESCENT (**TS/TI ONLY**) **NOT SHOWN**
-	25.9663.2036	REF	EA	CABLE ASSY, IGNITOR TO LAMP SOCKET (**AS/AI ONLY**) **NOT SHOWN**
7	42.9663.7237	1	EA	REFLECTOR, 48 LUNE (**TS/TI ONLY**)
	42.9663.7118	1	EA	REFLECTOR, 8, 10, 14 DEGREE LUNES FACETED (**AS/AI ONLY**)
8	53.2002.0001	3	EA	NUT, 6-32 KEP ZINC PLATED
9	53.6522.0005	4	EA	SCREW, 6-32 X 3/8" LG PFZ TYPE F
10	53.6553.0004	8	EA	SCREW, 10-32 X 3/8" LG PPB TYPE F
11	53.6607.0001	3	EA	SCREW, 6-32 X 1/4" PPB
12	53.6682.0037	1	EA	SCREW, 10-32 X 1/2" LG PPZ SEMS-EXT
13	55.3301.0010	1	EA	WASHER, #10 FLAT
14	55.6636.0004	1	EA	WASHER, #10 FENDER ZINC PLT SS 1.250"OD .219"ID .047"THK

Rear Head Assembly (continued)



Reflector Orientation



Note: * When installing reflector, align dimple in reflector flange (item 7) with reflector mount (item 2) as shown (for all models). Bulkhead assembly (item 5) removed for clarity.

Figure 3-26: Rear Head Assembly

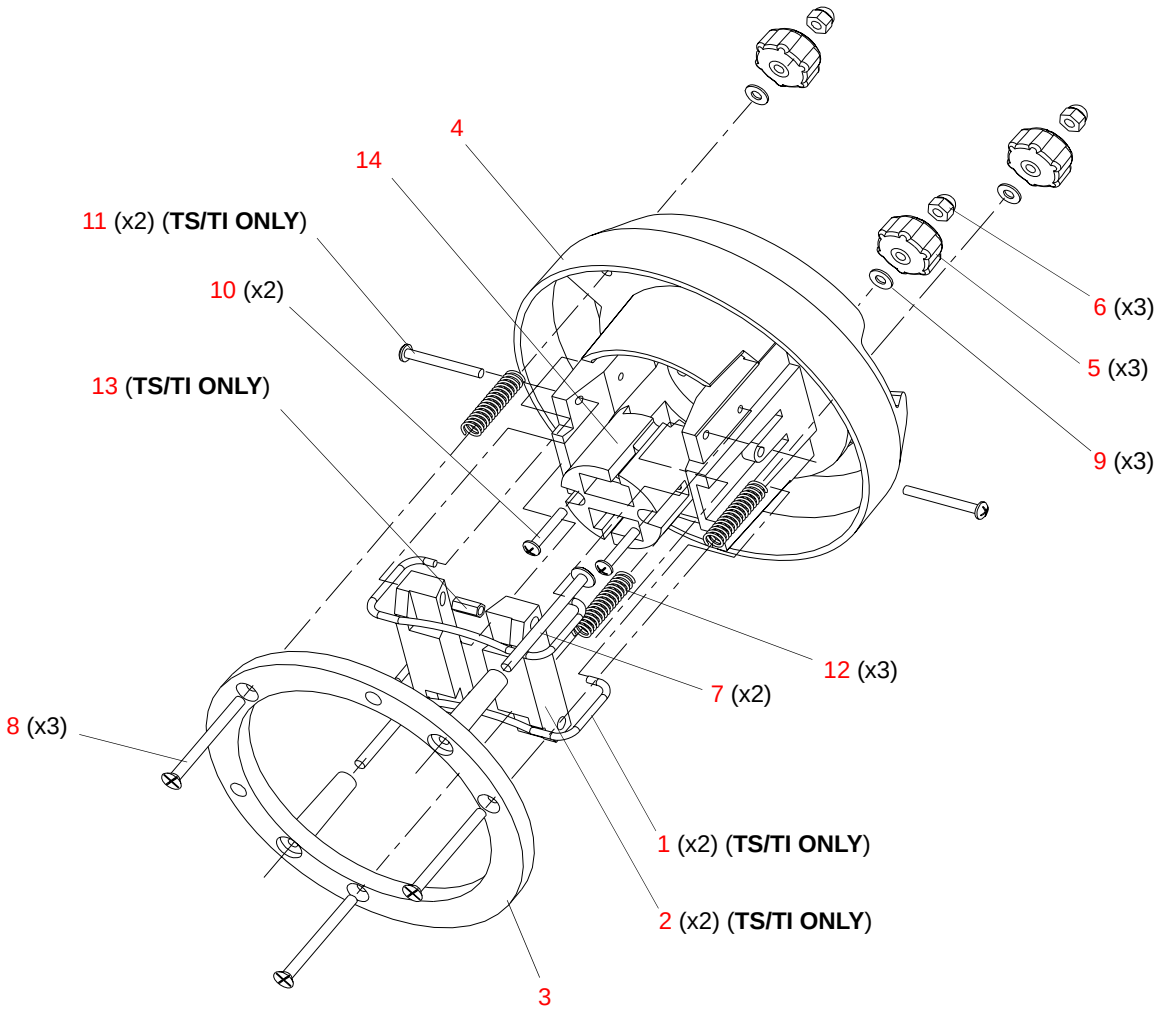
Back Cap Assembly

21.9664.1127.01 (TS/TI) Rev J
21.9664.1127.11 (AS/AI) Rev J

Refer to Figure 3-27.

No.	Item	Qty.	UM.	Description
1	10.9663.1116	2	EA	CLAMP, LAMP BASE BAIL (**TS/TI ONLY**)
2	10.9663.1119	2	EA	LAMP BASE CLAMP (**TS/TI ONLY**)
3	10.9663.2136	1	EA	PLATE, BACKCAP ADJUST
4	12.9663.2126	1	EA	BACKCAP, MACHINED
5	10.9678.0645	3	EA	KNOB, LAMP ADJUST, MOLDED
6	53.2030.0001	3	EA	NUT, ACORN 10-32 THD, 3/8 W BLK ZINC
7	53.5711.2500	2	EA	SCREW, 10-32 X 2-1/2" PTZ BLACK
8	53.6539.0011	3	EA	SCREW, 10-32 X 2-1/4" PFBSS UNF-2A
9	55.6546.0004	3	EA	WASHER, TEFLON .201 ID .438 OD X .04 THK
10	53.6575.0001	2	EA	SCREW, 8-32 X 1.0" PPZ
11	53.6575.0005	2	EA	SCREW, 8-32 X 1 1/2" PPZ (**TS/TI ONLY**)
12	55.6568.0059	3	EA	SPRING, CPRSN, .360" OD 1.50" LG .045" DIA SS
13	55.6704.0013	1	EA	STANDOFF, 1/4" HEX 8-32 .500" LG (**TS/TI ONLY**)
14	71.2560.0001	1	EA	SOCKET, LAMP G22 SCREW TERMINALS

Back Cap Assembly (continued)



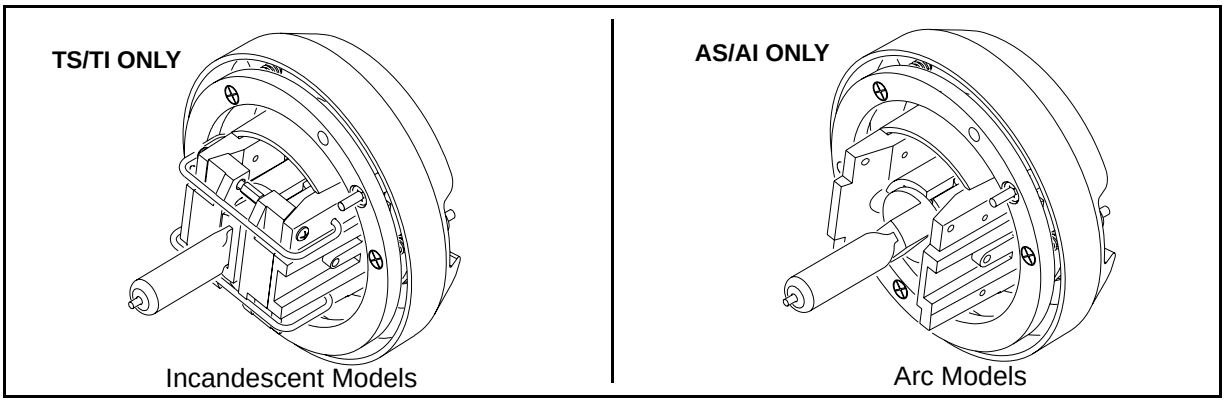


Figure 3-27: Back Cap Assembly

Yoke Assembly

Yoke Legs Assembly

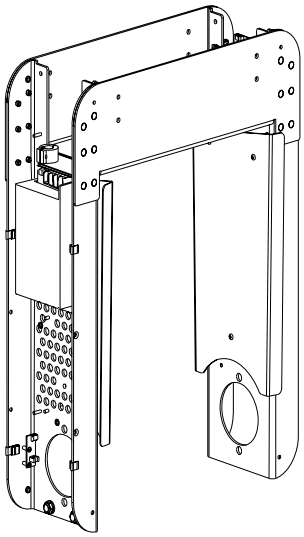
21.9664.1850.01 (TS/TI) Rev B
21.9664.1850.11 (AS/AI) Rev B
21.9664.1850.21 (TSD/TID - 115V DIM) Rev B
21.9664.1850.31 (TSD/TID - 230V DIM) Rev B

Refer to Figure 3-28.

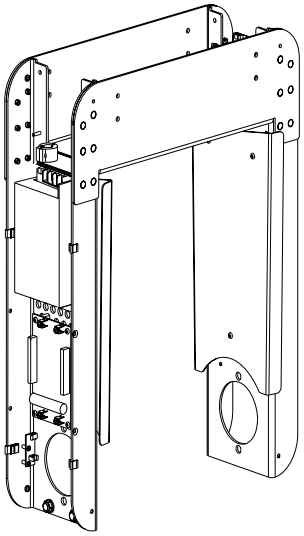
No.	Item	Qty.	UM.	Description
1	10.9661.1364	1	EA	INSULATOR, ADHESIVE BACKED - TOP COVER (**AS/AI ONLY**)
2	10.9663.1827	2	EA	NUT PLATE, PAN/TILT MOTOR
3	10.9663.2842	2	EA	HEATSHIELD, YOKE LEG
4	10.9663.1852	1	EA	COUNTERWEIGHT, DIMMER (**TSD/TID ONLY**)
5	21.9665.8816	1	EA	ASSY, TILT MOTOR
6	22.9663.2801	1	EA	ASSY, YOKE
7	24.9661.1126	1	EA	PCB ASSY, SOLID STATE IGNITOR (**AS/AI ONLY**)
8	24.9663.3230	1	EA	PCB ASSY, WHEEL SENSOR
-	25.9663.2002	1	EA	CABLE ASSY, TILT COT - **NOT SHOWN**
-	25.9663.2026	1	EA	CABLE ASSY, DIMMER TO CNTRLR - **NOT SHOWN** (**TSD/TID ONLY**)
-	25.9663.2037	1	EA	CABLE ASSY, DIMMER TO LAMP SCKT - **NOT SHOWN** (**TSD/TID ONLY**)
-	25.9663.2817	1	EA	CABLE ASSY, LVS CHASSIS GROUND - **NOT SHOWN** (**TS/TI ONLY**)
-	25.9663.2824	1	EA	CABLE ASSY, LVS DC (+24VDC) OUTPUT - **NOT SHOWN**
-	25.9663.2826	1	EA	CABLE ASSY, DIMMER TO LVS - **NOT SHOWN (TSD/TID ONLY)**
-	25.9664.2020	1	EA	CABLE ASSY, PAN MOTOR - **NOT SHOWN**
9	53.2019.0004	2	EA	NUT, 3/8-16 X 7/32"THK HEX JAM GRD5 ZINC PLT
10	53.6539.0001	2	EA	WASHER, 3/8" SPLIT LOCK
11	53.6543.0001	14	EA	SCREW, 6-32 X 3/8" PPB (**AS/AI ONLY)**
		10	EA	SCREW, 6-32 X 3/8" PPB (**TS/TI/TSD/TID ONLY**)
12	53.6545.0007	4	EA	SCREW, 8-32 X 3/8" PFB (**TSD/TID ONLY**)
13	53.6567.0001	3	EA	SCREW, 4-40 X 1/2" PPZ
14	53.6617.0001	4	EA	SCREW, 6-32 X 1" PPB
15	53.6634.0003	2	EA	SCREW, 3/8-16 X 1/2"LG SOC HD CAP ALLY STL
16	55.2140.0001	4	EA	STANDOFF, 1/4" HEX 6-32 .813"LG (**AS/AI ONLY**)

No.	Item	Qty.	UM.	Description
17	55.2143.0002	7	EA	STANDOFF, 1/4"HEX 6-32 1.375"LG FF ALUM
18	55.2203.0001	2	EA	SCREW, 4-40 X 1/4 " PPZ
19	55.2204.0001	3	EA	WASHER, #4 NYLON (**AS/AI ONLY**)
20	55.3301.0006	4	EA	WASHER, #6 FLAT SS
21	55.6525.0005	3	EA	WASHER, #4 SHOULDER NYLON .125 DP (**AS/AI ONLY**)
22	55.6568.0056	1	EA	SPRING, CPRSN .600"OD .625"LG .080"WIRE DIA MUSIC WIRE
23	55.6597.0003	4	EA	CLIP, CABLE SELF RETAINING 1/8" THK PANEL
24	67.4006.0006	1	EA	CLAMP, CABLE EMI SUP. FERRITE 0.52, 0.61 LG
25	69.3173.0115	1	EA	DIMMER, 1200W, 115V, REV PHASE CNTRL (**TSD/TID 115V ONLY**)
	69.3173.0240	1	EA	DIMMER, 1200W, 240V, REV PHASE CNTRL (**TSD/TID 230V ONLY**)
26	69.3177.0151	1	EA	POWER SUPPLY, 150W +24V/6.3A

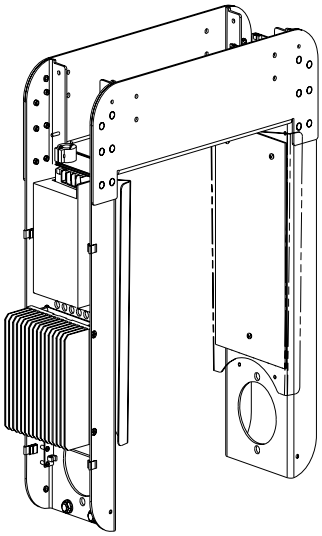
Yoke Mount Configurations -



VL1100 TS, TI Units



VL1100 AS, AI Units



VL1100 TSD, TID Units

With Integral 115V or 230V Dimmer

Yoke Legs Assembly (continued)

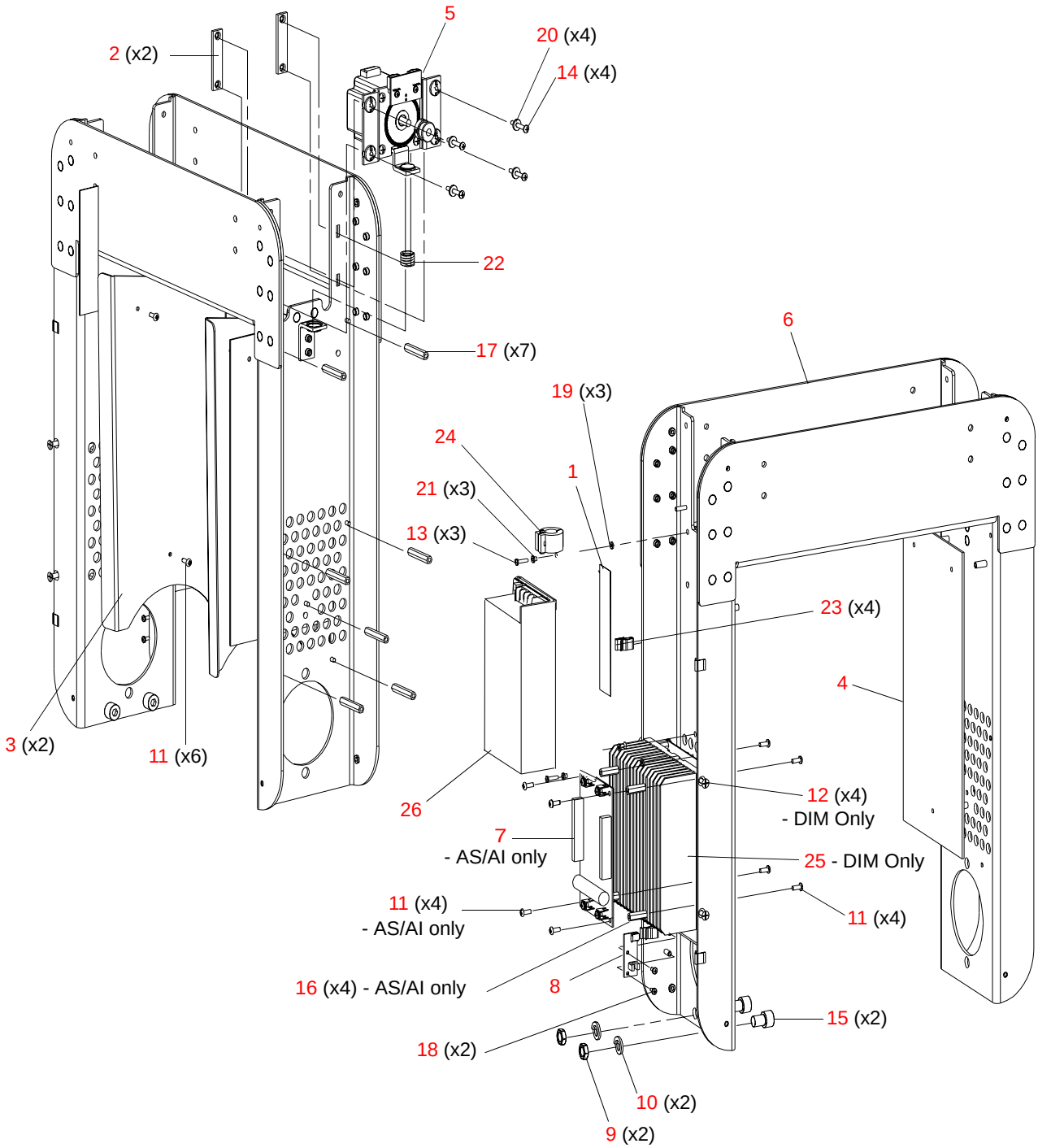


Figure 3-28: Yoke Legs Assembly

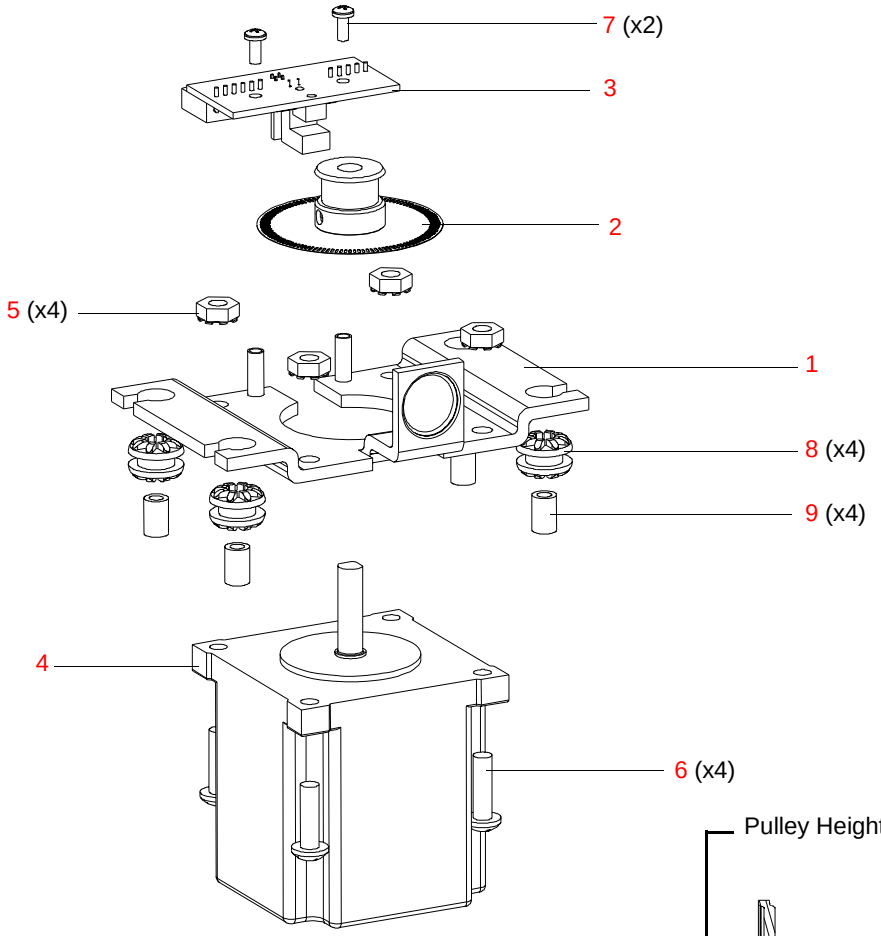
Tilt Motor Assembly

21.9665.8816 Rev B

Refer to Figure 3-29.

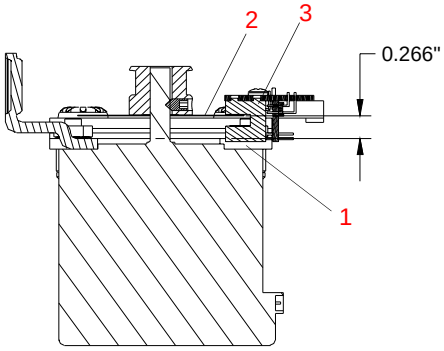
No.	Item	Qty.	UM.	Description
1	10.9663.8825	1	EA	MOUNT, MOTOR TILT
2	21.9663.1818	1	EA	ASSY, DRIVE PULLEY
	- 10.9663.1810	1	EA	PULLEY, DRIVING - PAN/TILT
	- 10.9663.8820	1	EA	CODE WHEEL
	- 53.5561.0250	2	EA	SCREW, 6-40 X 1/4" SET CONE POINT
3	24.9661.7629	1	EA	PCB ASSY, PAN/TILT ENCODER
4	44.9678.0680	1	EA	MOTOR, 3 PHASE SZ 23 HIGH TORQUE
5	53.2001.0001	4	EA	NUT, #8-32 KEPS SS
6	53.6546.0001	4	EA	SCREW, 8-32 X 5/8" PPB
7	55.2203.0001	2	EA	SCREW, 4-40 X 1/4" PPZ
8	55.6579.0015	4	EA	GROMMET, 3/8" HOLE .226" ID .125" THK VERSA-DAMP
9	55.6655.0005	4	EA	SPACER, 1/4" RND .359" LG .141" THRU ALUM

Tilt Motor Assembly (continued)



Note: Vari-Lite recommends that this assembly be replaced as a complete assembly. Although you can replace only the motor, the pulley (Item 2) is bonded to the motor shaft during assembly and cannot be removed intact. If you order a replacement motor (Item 4), also order the pulley (Item 2). Contact Vari-Lite Customer Service for installation information.

Pulley Height Detail & Installation



Step	1.	Apply one drop of Loctite 603 to motor shaft.
Step	2.	Install drive pulley on motor shaft using twisting motion to insure coverage of shaft with loctite.
Step	3.	Do not allow Loctite to drip into motor bearing.
Step	4.	Set pulley height as shown above. The dimension is from bottom of code wheel to the top of the motor mount.
Step	5.	Apply Loctite 242 to pulley set screws. Insure set screws are aligned and tightened on flat sides of motor shaft.

Figure 3-29: Tilt Motor Assembly

Crossmember Assembly

21.9664.1811.01 (TS/TI) Rev C
21.9664.1811.11 (AS/AI) Rev C
21.9664.1811.21 (TSD/TID) Rev C

Refer to Figure 3-30.

No.	Item	Qty.	UM.	Description
1	10.9663.1808	1	EA	TOGGLE, PAN
2	10.9663.1809	1	EA	ACTUATOR, TOGGLE PAN
3	10.9663.1827	2	EA	NUT PLATE, PAN/TILT MOTOR
4	10.9663.1844	1	EA	SHIELD, WIRE PAN
5	10.9663.1846	1	EA	TETHER, PAN TUBE SAFETY
6	10.9663.1881	1	EA	FOAM BLOCK, SAFETY TETHER
7	10.9663.1890	1	EA	PULLEY, PAN
8	10.9685.0534	1	EA	PLATE, PAN TUBE COVER
9	21.9664.1812	1	EA	ASSY, INNER CROSSMEMBER
10	21.9664.1813	1	EA	ASSY, OUTER CROSSMEMBER
11	21.9664.1819.01	1	EA	ASSY, PAN TUBE (**TS/TI ONLY**)
	21.9664.1819.11	1	EA	ASSY, PAN TUBE (**AS/AI ONLY**)
	21.9664.1819.21	1	EA	ASSY, PAN TUBE (**TSD/TID ONLY**)
12	21.9665.9815	1	EA	ASSY, PAN MOTOR
13	24.9663.1230	1	EA	PCB ASSY, WHEEL SENSOR
-	25.9663.2001	1	EA	CABLE ASSY, PAN EOT - **NOT SHOWN**
14	53.2020.0001	1	EA	NUT, 1/4-20 HEX STL ZINC PLTD
15	53.5509.1375	1	EA	SCREW, 8-32 X 3/8" PPZ TYPE F
16	53.6505.0009	1	EA	BOLT, 1/4-20 X 2 1/2" HX HD CAP ZINC
17	53.6552.0002	6	EA	SCREW, 8-32 UNC X 1/2" PFB
18	53.6556.0006	4	EA	SCREW, 4-40 X 3/8" LG PPZ TYPE F
19	53.6575.0020	14	EA	SCREW, 8-32 X 3/8" LG PFZ TYPE-F THRD CUTTING
20	53.6617.0001	4	EA	SCREW, 6-32 X 1" PPB
21	54.1206.0014	3	EA	RING, RETAINING 1.375" SHAFT 1.291" GRV DIA .056" GRVWD EXTERNAL
22	54.2047.0024	1	EA	BELT, TIMING GT 3MM PITCH 150GRV 6MM WD NEOPRENE
23	55.2203.0001	2	EA	SCREW, 4-40 X 1/4 " PPZ
24	55.3301.0006	4	EA	WASHER, #6 FLAT SS
25	55.6563.0001	3	EA	SCREW, 10-32 X 1/4" PPZ
26	55.6568.0055	1	EA	SPRING, CPRSN .240"OD .813"LG .038" WIRE DIA MUSIC WIRE

No.	Item	Qty.	UM.	Description
27	55.6799.0001	1	EA	SHIM, 1.375" ID, 1.875" OD, 0.010" THK
28	55.6799.0002	1	EA	SHIM, 1.375" ID, 1.875" OD, 0.005" THK

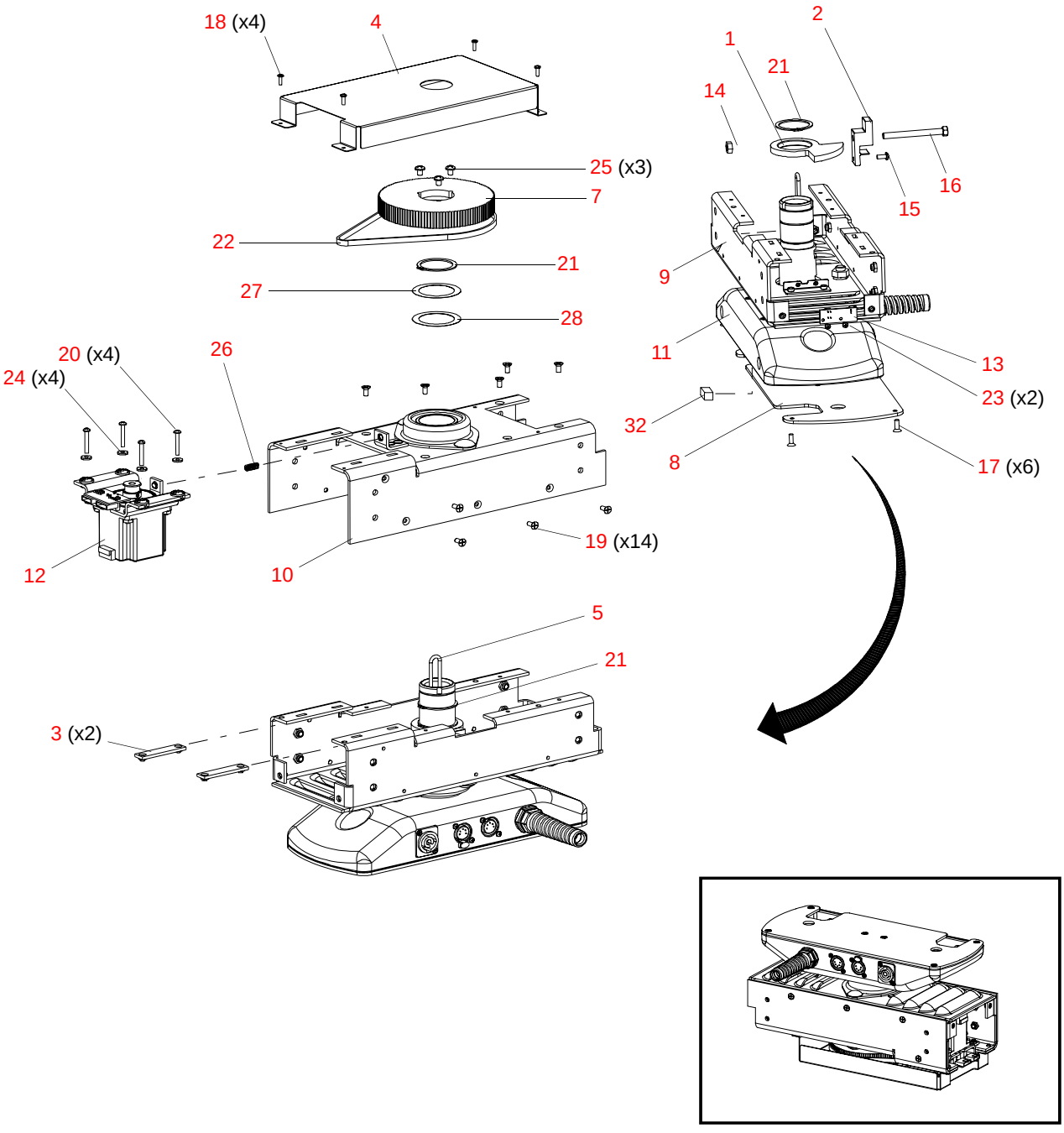


Figure 3-30: Crossmember Assembly

Inner Crossmember Assembly

21.9664.1812 Rev A

Refer to Figure 3-31.

No.	Item	Qty.	UM.	Description
1	10.9663.2805	1	EA	CROSSMEMBER, INNER
2	10.9678.0886	1	EA	SPACER, PAN BEARING .235" THK
3	53.2019.0001	2	EA	NUT, 3/8-16 HEX
4	53.6505.0022	2	EA	BOLT, 3/8-16 X 3/4"LG CARRIAGE GRD5 ZINC PLT
5	53.6539.0001	2	EA	WASHER, 3/8" SPLIT LOCK
6	54.1255.0002	1	EA	BEARING ASSY, FLUSH MOUNT HOUSING LARGE

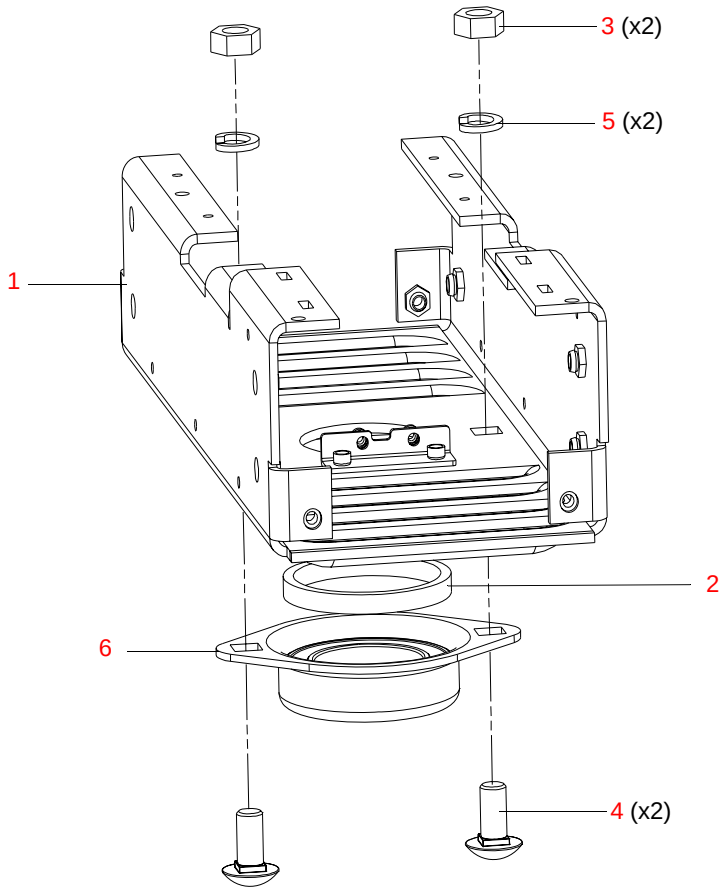


Figure 3-31: Crossmember Inner Assembly

Outer Crossmember Assembly

21.9664.1813 Rev C

Refer to Figure 3-32.

No.	Item	Qty.	UM.	Description
1	10.9663.1897	1	EA	SPACER, PAN BEARING
2	21.9664.1843	1	EA	ASSY, CROSSMEMBER OUTER
3	53.2019.0001	2	EA	NUT, 3/8-16 HEX
4	53.6505.0022	1	EA	BOLT, 3/8-16 X 3/4"LG CARRIAGE GRD5 ZINC PLT
5	53.6505.0023	1	EA	BOLT, 3/8-16 X 1-1/4"LG CARRIAGE GRD5 ZINC PLT
6	53.6539.0001	2	EA	WASHER, 3/8" SPLIT LOCK
7	53.6569.0016	2	EA	RIVET, 5/32" OD LATCH 0.31" GRIP
8	54.1255.0001	1	EA	BEARING ASSY, BLACK FLUSH MOUNT HOUSING

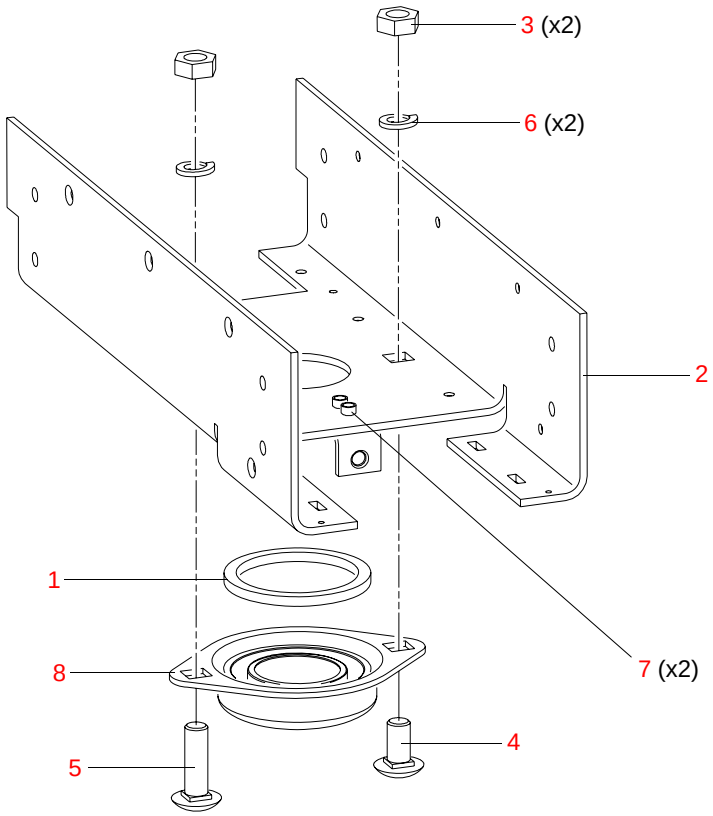


Figure 3-32: Crossmember Outer Assembly

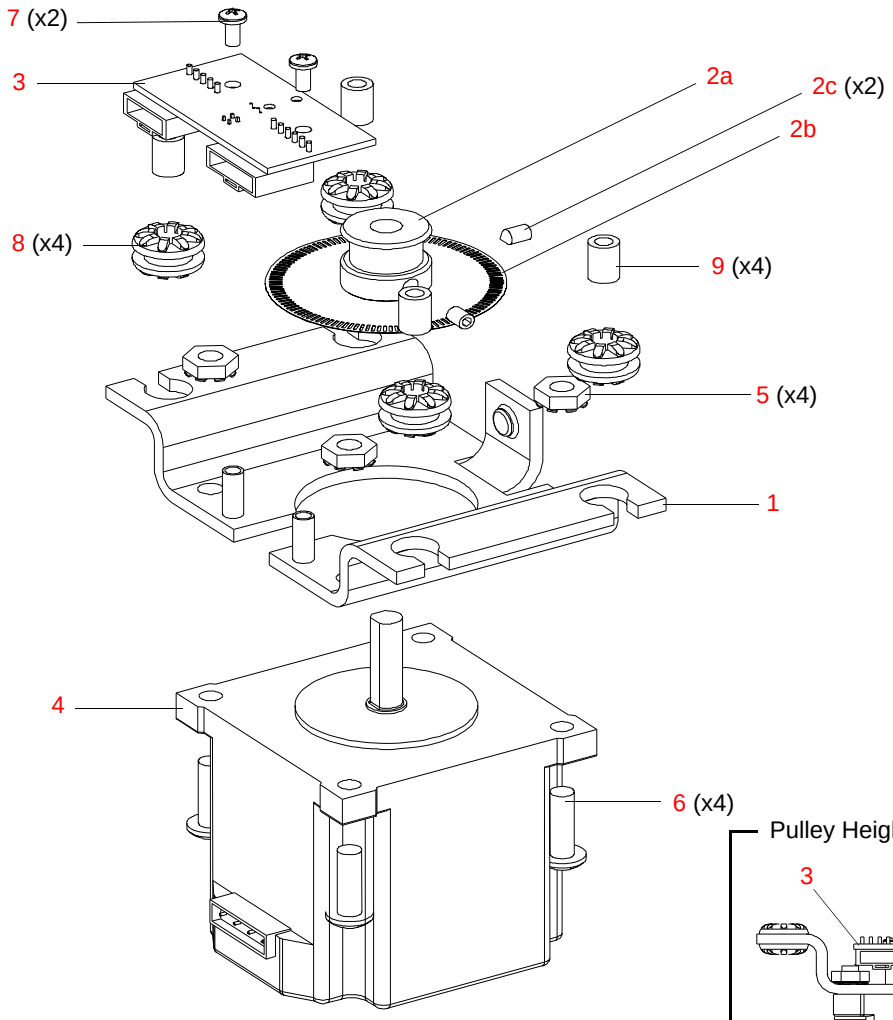
Pan Motor Assembly

21.9665.9815 Rev A

Refer to Figure 3-33.

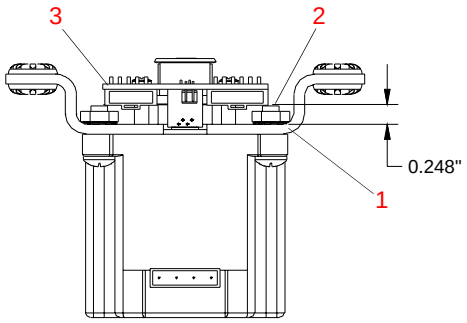
No.	Item	Qty.	UM.	Description
1	10.9665.8817	1	EA	MOTOR MOUNT, PAN MOTOR
2	21.9663.1818	1	EA	ASSY, DRIVE PULLEY
	- (2a) 10.9663.1810	1	EA	PULLEY, DRIVING - PAN/TILT
	- (2b) 10.9663.8820	1	EA	CODE WHEEL
	- (2c) 53.5561.0250	2	EA	SCREW, 6-40 X 1/4" SET CONE POINT
3	24.9661.7629	1	EA	PCB ASSY, PAN/TILT ENCODER
4	44.9663.0680	1	EA	MOTOR, 3 PHASE SZ 23 HIGH TORQUE
5	53.2001.0001	4	EA	NUT, #8-32 KEPS SS
6	53.6546.0001	4	EA	SCREW, 8-32 X 5/8" PPB
7	55.2203.0001	2	EA	SCREW, 4-40 X 1/4" PPZ
8	55.6579.0015	4	EA	GROMMET, 3/8" HOLE, 0.250 " ID VERSA
9	55.6655.0005	4	EA	SPACER, 1/4" RND, 0.359" LG, 0.141" THR

Pan Motor Assembly (continued)



Note: Vari-Lite recommends that this assembly be replaced as a complete assembly. Although you can replace only the motor, the pulley (Item 2) is bonded to the motor shaft during assembly and cannot be removed intact. If you order a replacement motor (Item 4), also order the pulley (Item 2). Contact Vari-Lite Customer Service for installation information.

Pulley Height Detail & Installation



Step	1.	Apply one drop of Loctite 603 to motor shaft.
Step	2.	Install drive pulley on motor shaft using twisting motion to insure coverage of shaft with loctite.
Step	3.	Do not allow Loctite to drip into motor bearing.
Step	4.	Set pulley height as shown above.
Step	5.	Apply Loctite 242 to pulley set screws. Insure set screws are aligned and tightened on flat sides of motor shaft.

Figure 3-33: Pan Motor Assembly

Pan Tube Assembly

21.9664.1819.01 (TS/TI) Rev C
21.9664.1819.11 (AS/AI) Rev C
21.9664.1819.21 (TSD/TID) Rev C

Refer to Figure 3-34.

No.	Item	Qty.	UM.	Description
1	04.9640.0374	1	EA	LABEL, P.E. GROUND
2	10.9664.1851	1	EA	PAN TUBE, TOP
3	24.9664.4895	1	EA	PCB ASSY, DMX INPUT
4	25.9663.1921	1	EA	CABLE ASSY, ARC POWER INPUT (PIGTAIL) (**AS/AI ONLY**)
5	25.9663.2015.01	1	EA	CABLE ASSY, NEUTRIK CONNECTOR
-	25.9663.2816.01	1	EA	CABLE ASSY, INC. LVS AC INPUT (**TS/TI/TSD/TID ONLY**) - **NOT SHOWN**
-	25.9663.2816.11	1	EA	CABLE ASSY, ARC LVS AC INPUT (**AS/AI ONLY**) - **NOT SHOWN**
-	25.9663.2021	1	EA	CABLE ASSY, BALLAST CNTRL LINK (**AS/AI ONLY**) - **NOT SHOWN**
-	25.9663.2022	1	EA	CABLE ASSY, DATA I/O LINK - **NOT SHOWN**
6	25.9663.2030	1	EA	CABLE ASSY, STRAIN RELIEF (**TS/TI ONLY**)
-	25.9663.2033	1	EA	CABLE ASSY, LAMP PWR INC. (**TS/TI ONLY**) - **NOT SHOWN**
-	25.9663.2035	1	EA	CABLE ASSY, ARC PWR TO IGNITOR (**AS/AI ONLY**) - **NOT SHOWN**
7	52.8295.0002	2	EA	TERMINAL STRIP, 300V 12AWG 20A 2 POS. (**AS/AI ONLY**)
	52.8295.0002	1	EA	TERMINAL STRIP, 300V 12AWG 20A 2 POS. (**TS/TI ONLY**)
8	52.8295.1002	1	EA	SPACER, TERMINAL STRIP, 600V, 2 POS (**AS/AI/TS/TI ONLY**)
9	53.2200.0004	2	EA	NUT, 4-40 KEPS SS
10	53.2200.0006	4	EA	NUT, 6-32 KEPS SS
11	53.6536.0001	2	EA	SCREW, 4-40 X 1/2" PFZ
12	51-0541	4	EA	SCREW, 4 X 3/8" LG H/L PPZ
13	53.6558.0014	1	EA	SCREW, 6-32 X 3/4" PPZ TYPE F THD CUTTING (**AS/AI/TS/TI ONLY**)
14	53.6582.0001	2	EA	SCREW, 6-32 X 3/4" PFZ
15	55.2199.1000	0.17	FT	HEAT SHRINK, 1" BLACK (**AS/AI ONLY**)
16	55.6662.0009	1	EA	HOLE PLUG, 7/8" HOLE DIA., BLACK (**TSD/TID ONLY**)
17	67.4018.0043	1	EA	FERRITE CORE, ROUND CABLE EMI 25.9MMX28.6MM (**AS/AI ONLY**)
18	68.4536.0003	1	EA	CHOKE ASSY, COMMON MODE (**AS/AI ONLY**)

Pan Tube Assembly (continued)

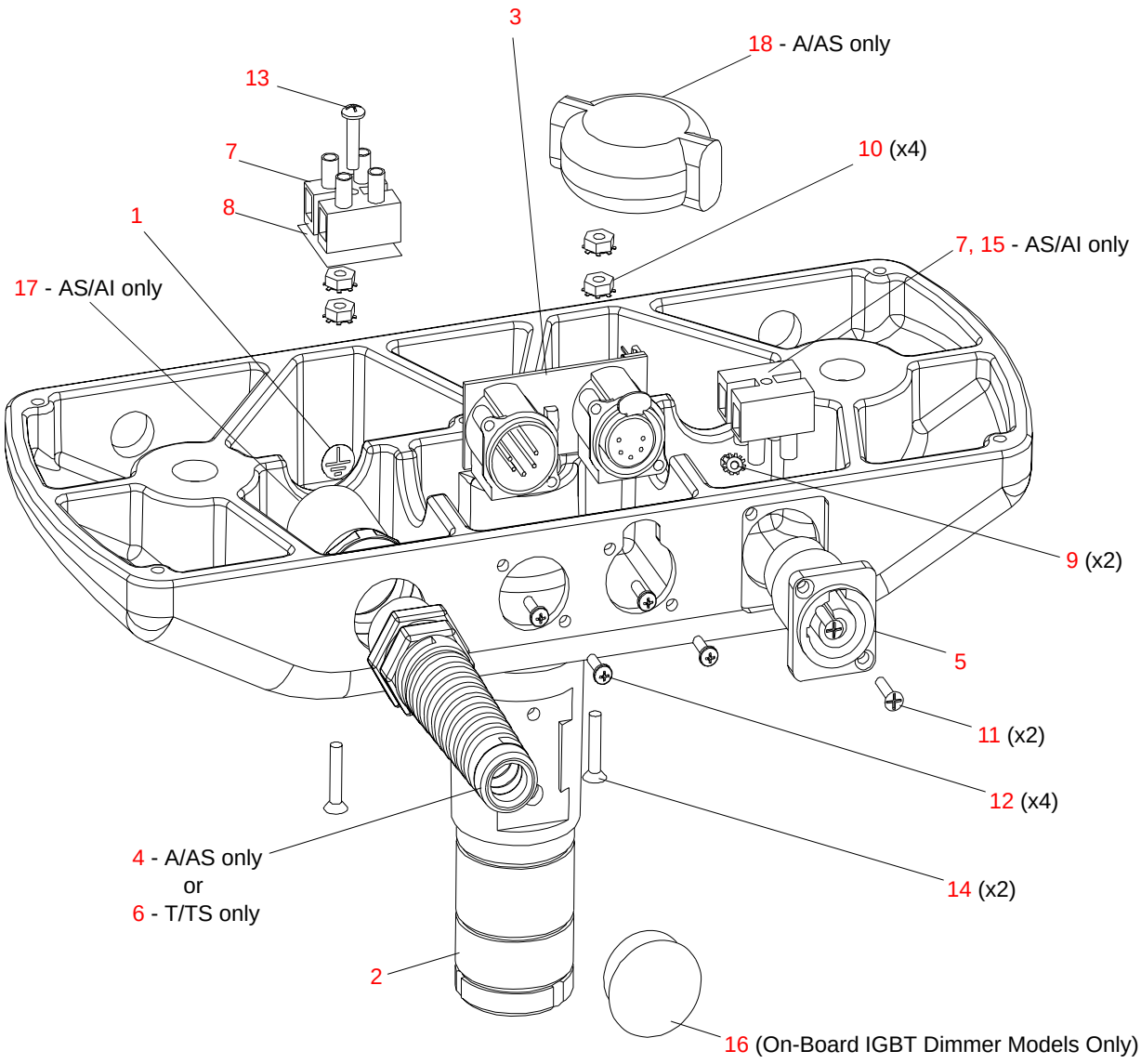


Figure 3-34: Pan Tube Assembly

Notes

Cables

Arc Power Input (Pigtail) Cable Assembly

25.9663.1921 Rev M

Refer to Figure 3-35.

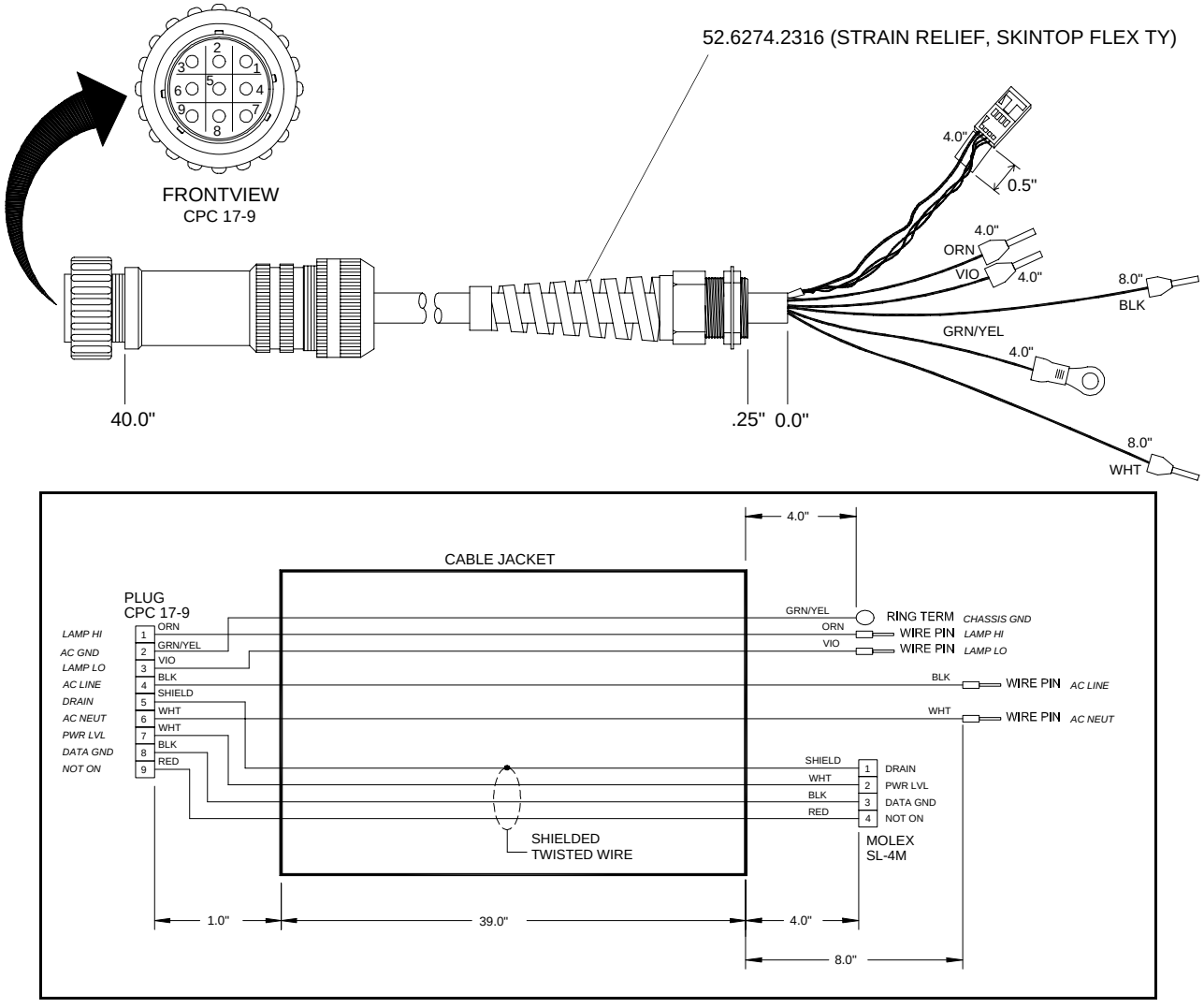


Figure 3-35: Arc Power Input (Pigtail) Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only (except as noted above). Cable assemblies are shown for visual reference only.

Pan EOT Cable Assembly

25.9663.2001 Rev A

Refer to Figure 3-36.

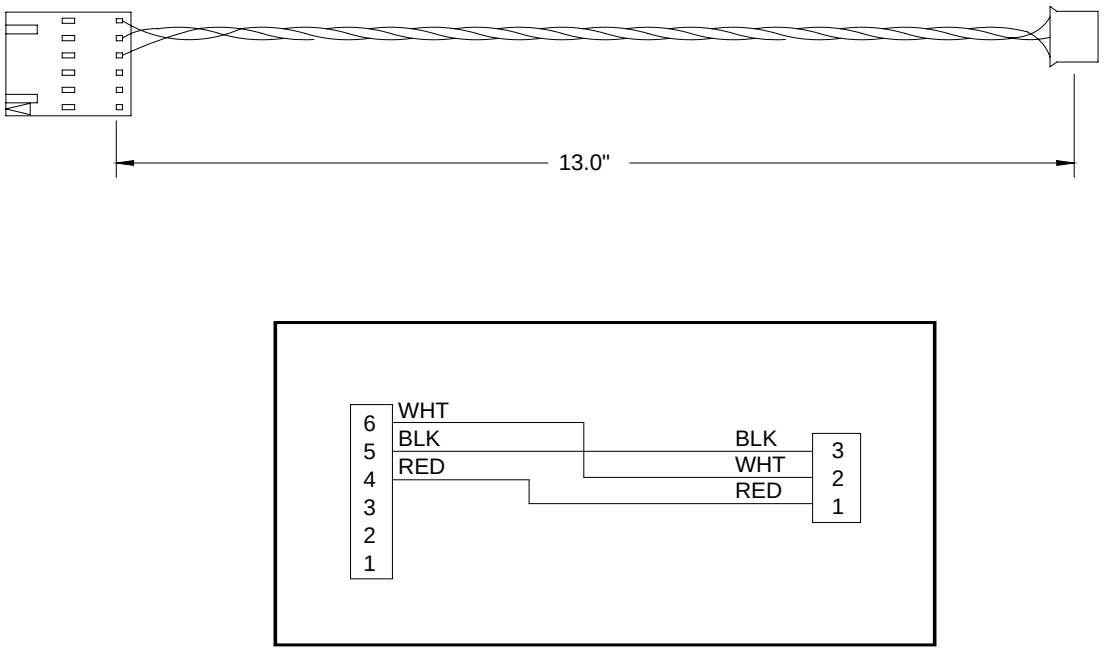


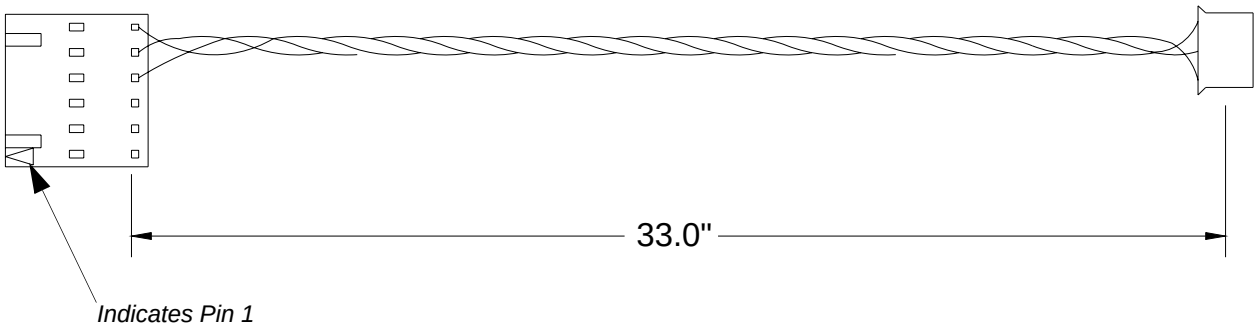
Figure 3-36: Pan EOT Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Tilt COT Cable Assembly

25.9663.2002 Rev A

Refer to Figure 3-37.



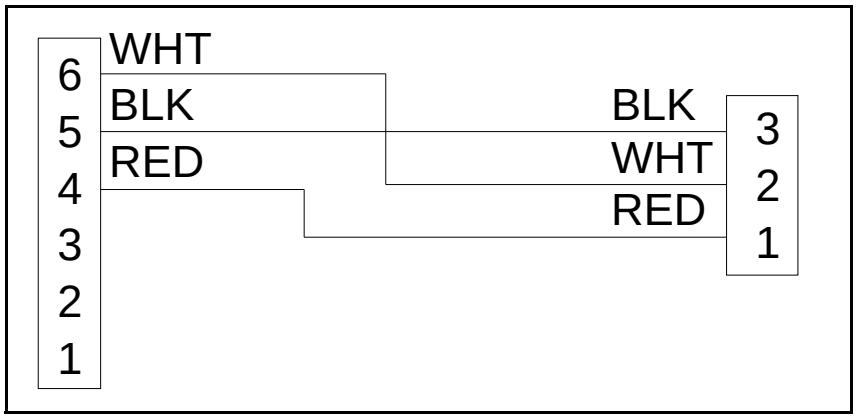


Figure 3-37: Tilt COT Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

AC Line Input Cable Assembly

25.9663.2015.01 Rev C

Refer to Figure 3-38.

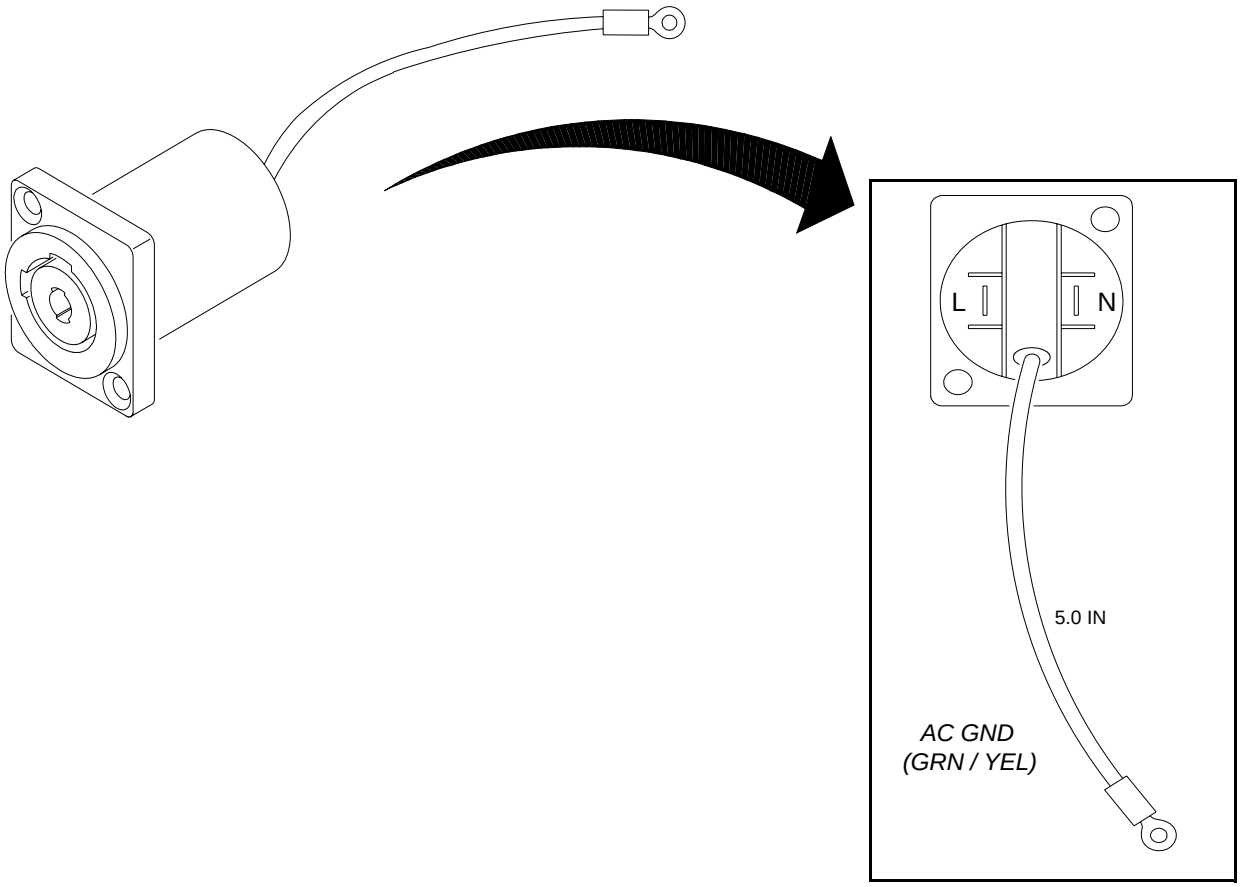


Figure 3-38: AC Line Input Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Incandescent LVS AC Input Cable Assembly

25.9663.2816.01 Rev B

Refer to Figure 3-39.

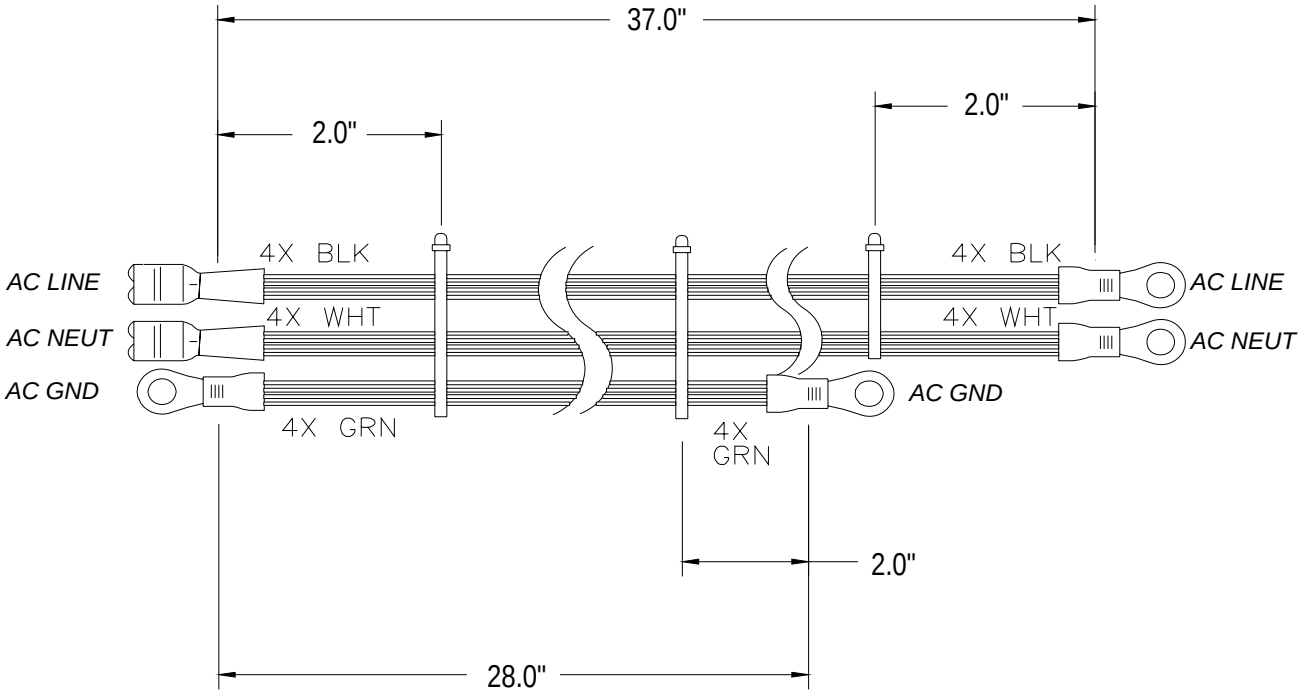


Figure 3-39: Incandescent LVS AC Input Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Arc LVS AC Input Cable Assembly

25.9663.2816.11 Rev B

Refer to Figure 3-40.

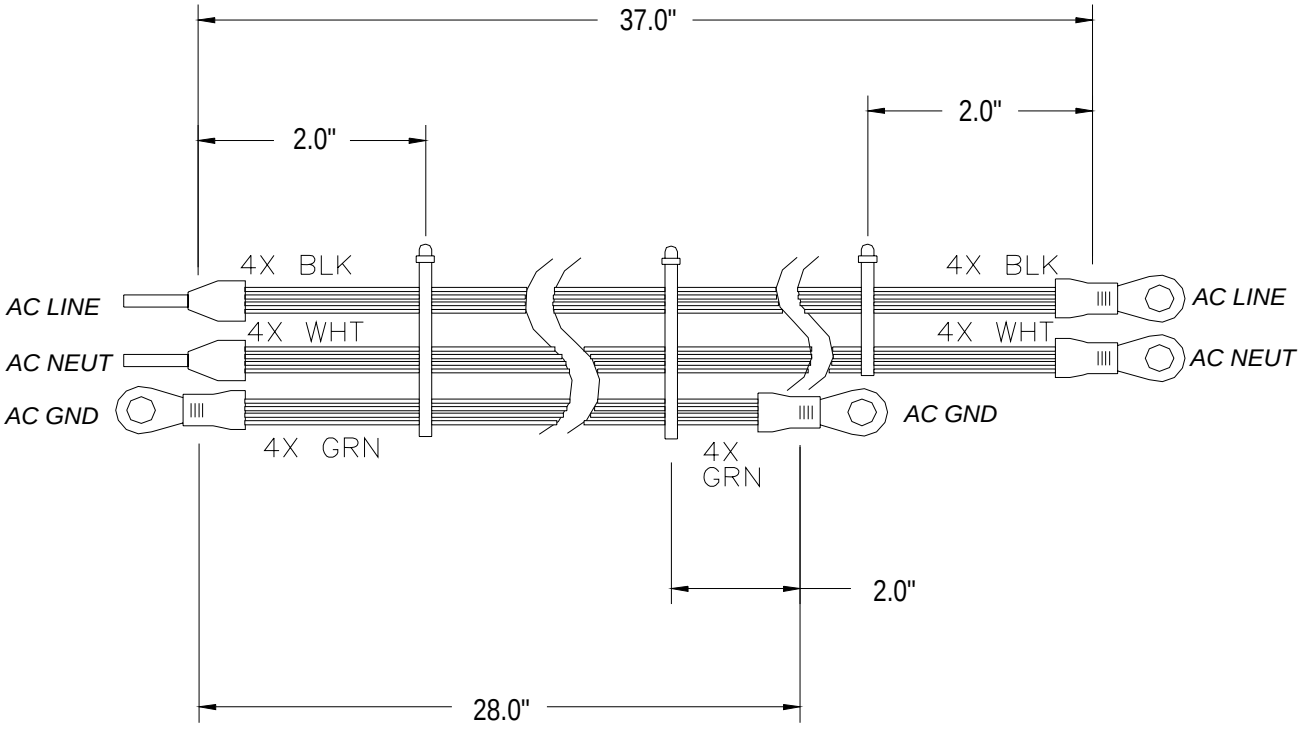


Figure 3-40: Arc LVS AC Input Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

LVS Chassis Ground Cable Assembly

25.9663.2817 Rev B

Refer to Figure 3-41

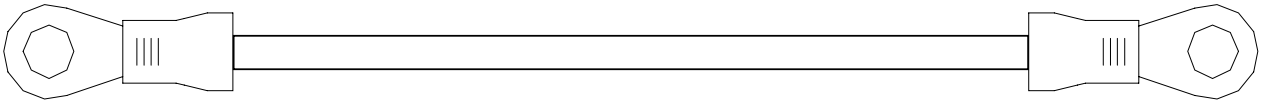


Figure 3-41: LVS Chassis Ground Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Yoke to Head Ground Cable Assembly

25.9663.2019 Rev B

Refer to Figure 3-42.

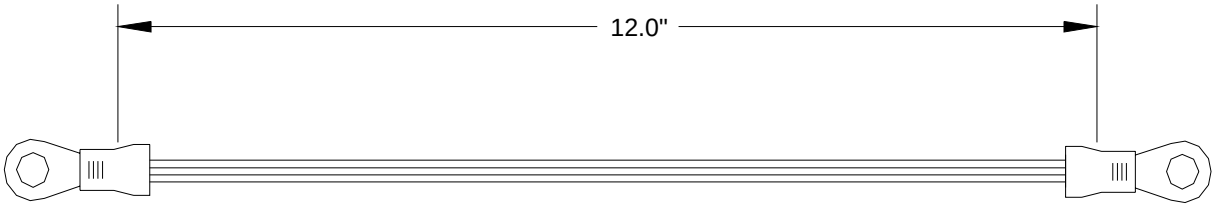


Figure 3-42: Yoke to Head Ground Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Pan/Tilt Control Cable Assembly

25.9664.2020 Rev A

Refer to Figure 3-43.

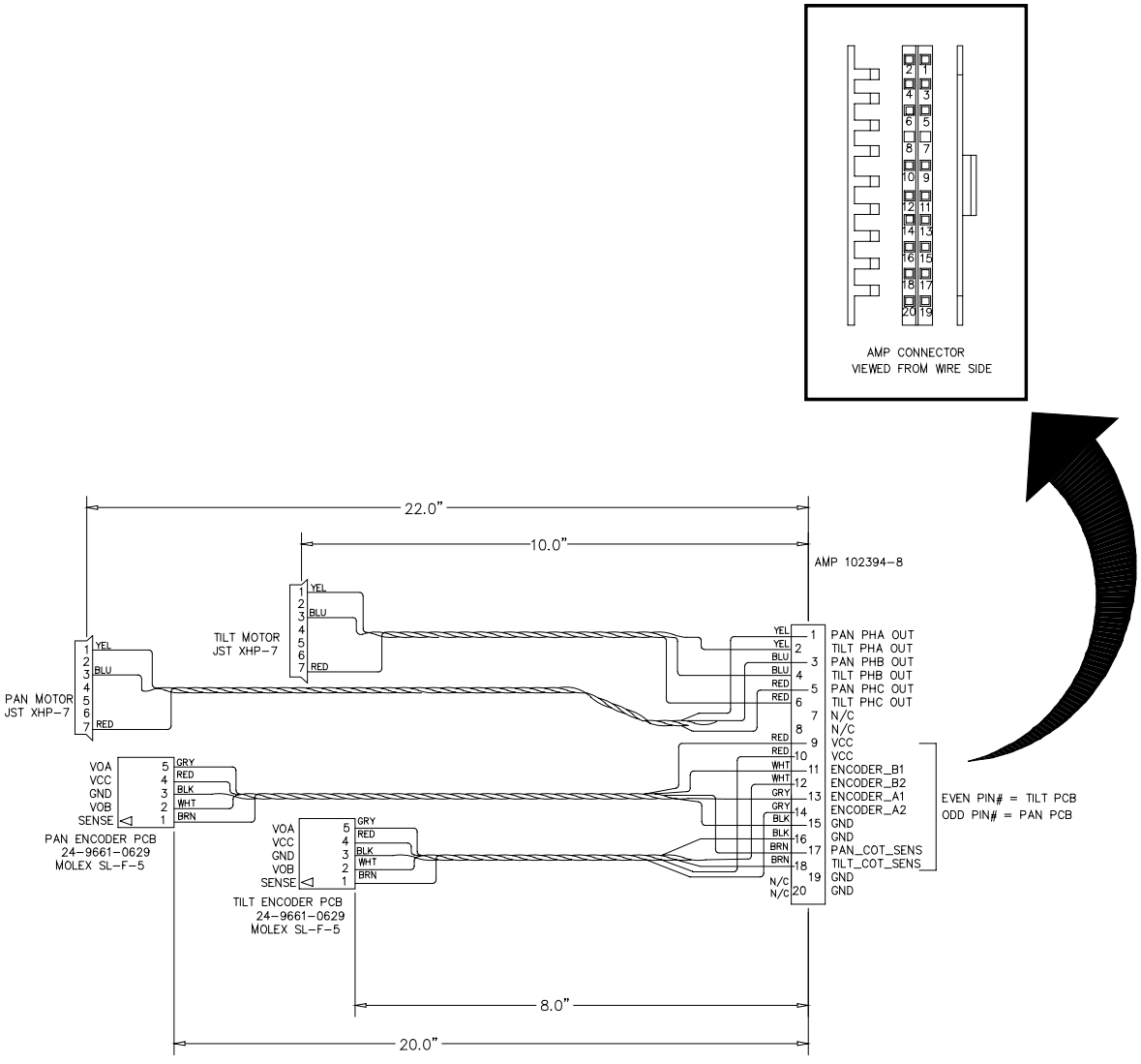


Figure 3-43: Pan/Tilt Control Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Ballast Control Link Cable Assembly

25.9663.2021 Rev A

Refer to Figure 3-44.

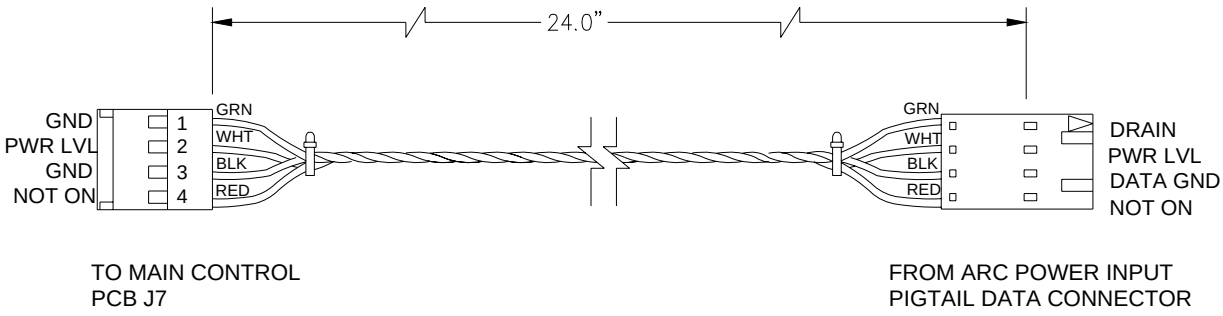


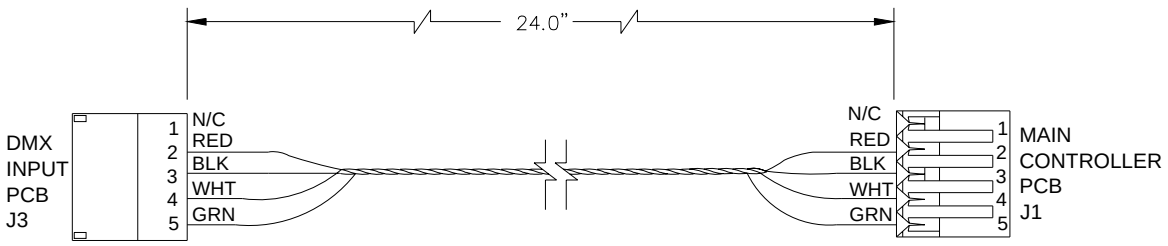
Figure 3-44: Ballast Control Link Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Data I/O Link Cable Assembly

25.9663.2022 Rev B

Refer to Figure 3-45.



PIN	COLOR	DMX SIGNAL	VARI-LITE SIGNAL
1	N/C	-	-
2	RED	COM IN+	BDCAST+
3	BLACK	COM IN-	BDCAST-
4	WHITE	COM OUT+	REPLY+
5	GREEN	COM OUT-	REPLY-

Figure 3-45: Data I/O Link Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

LVS DC Output Cable Assembly

25.9663.2824 Rev A

Refer to Figure 3-46

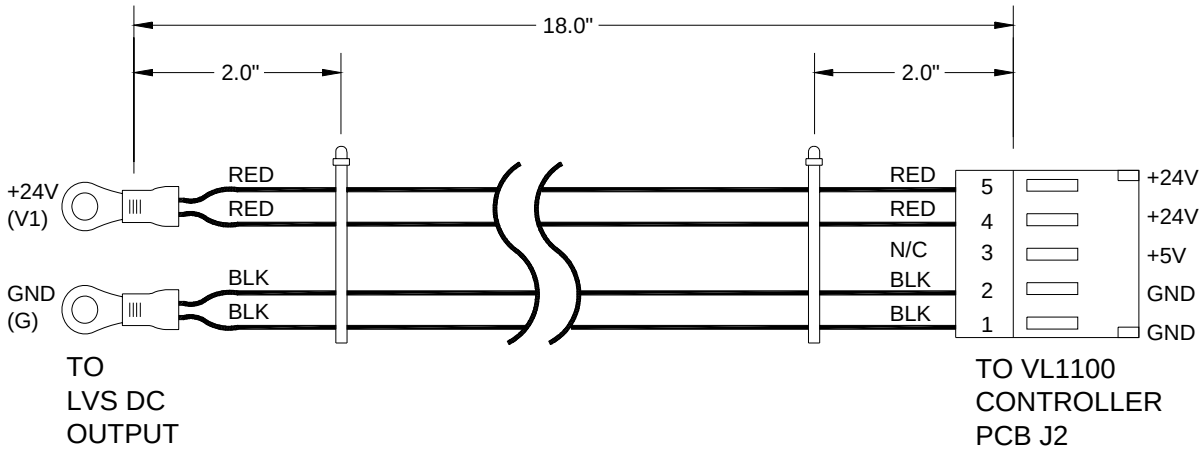


Figure 3-46: LVS DC Output Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Incandescent Power Input Cable Assembly

25.9663.2030 Rev A

Refer to Figure 3-47.

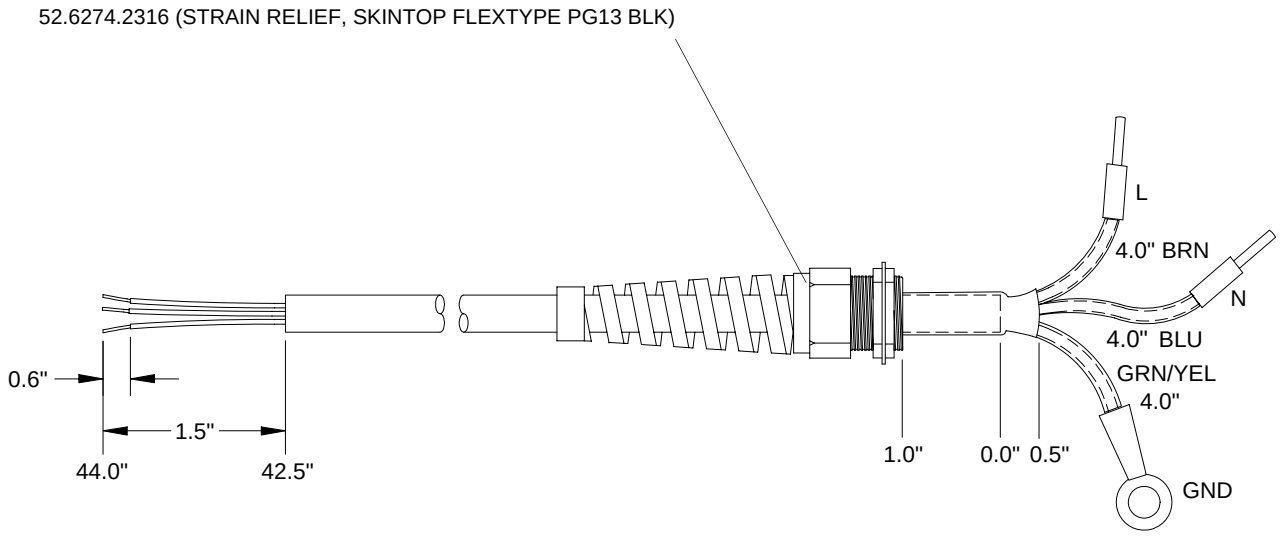


Figure 3-47: Incandescent Power Input Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only (except as noted above). Cable assemblies are shown for visual reference only.

Incandescent Lamp Power Cable Assembly

25.9663.2033 Rev G

Refer to Figure 3-48.

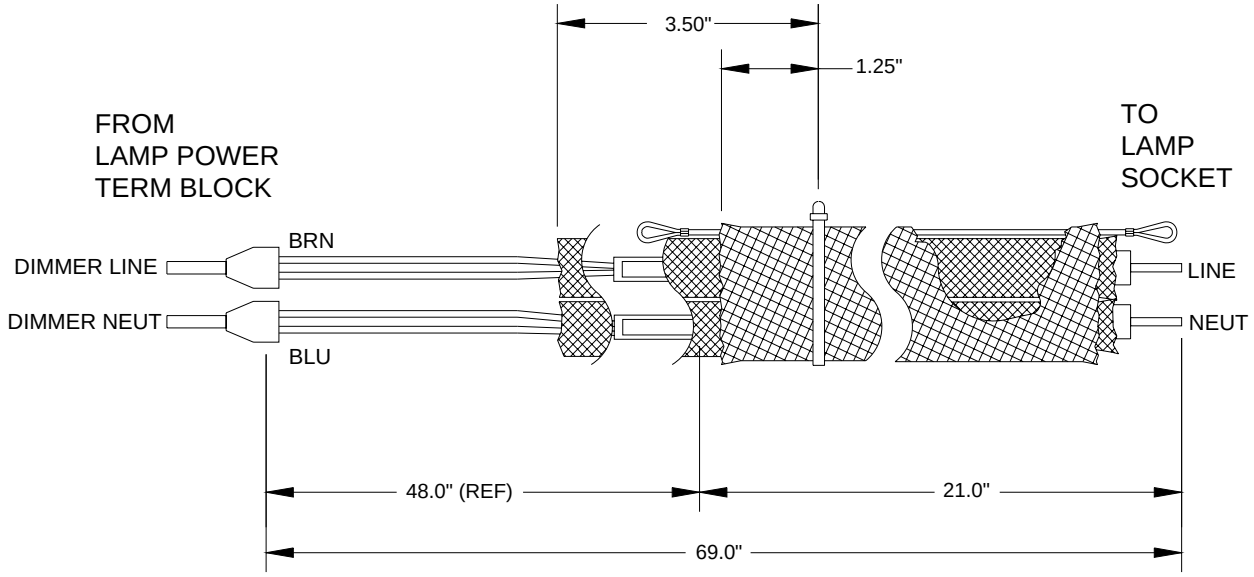


Figure 3-48: Incandescent Power to Lamp Socket Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Arc Power to Ignitor Cable Asembly

25.9663.2035 Rev C

Refer to Figure 3-49.

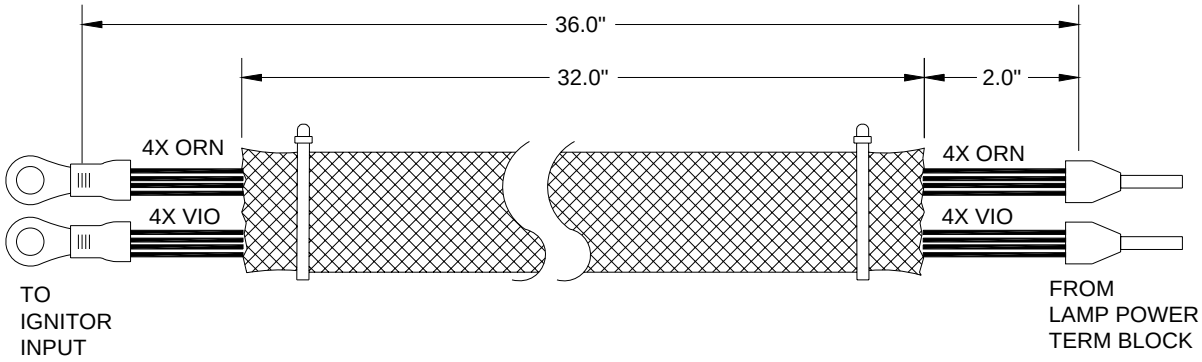


Figure 3-49: Arc Power to Ignitor Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Ignitor to Lamp Socket Cable Assembly

25.9663.2036 Rev H

Refer to Figure 3-50.

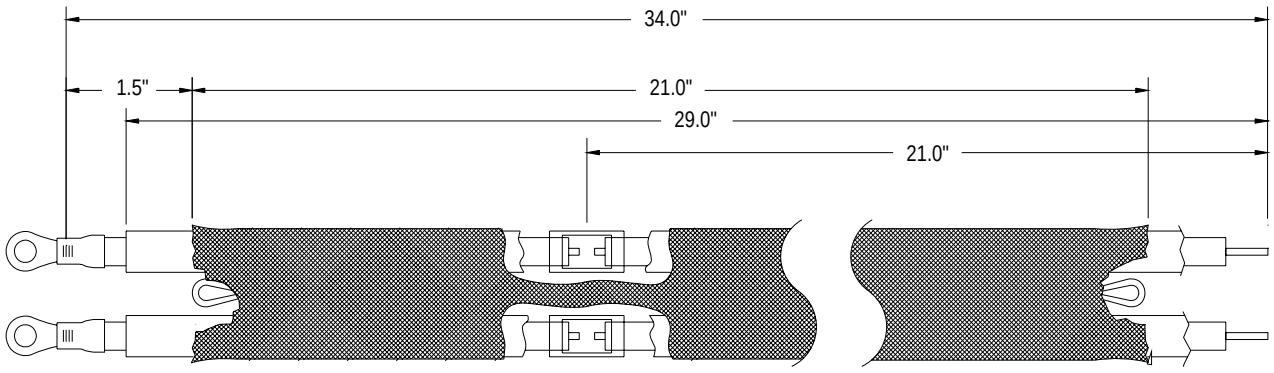


Figure 3-50: Ignitor to Lamp Socket Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Shutter Harness Cable Assembly

25.9663.2040 Rev F

Refer to Figure 3-51 and Figure 3-52.

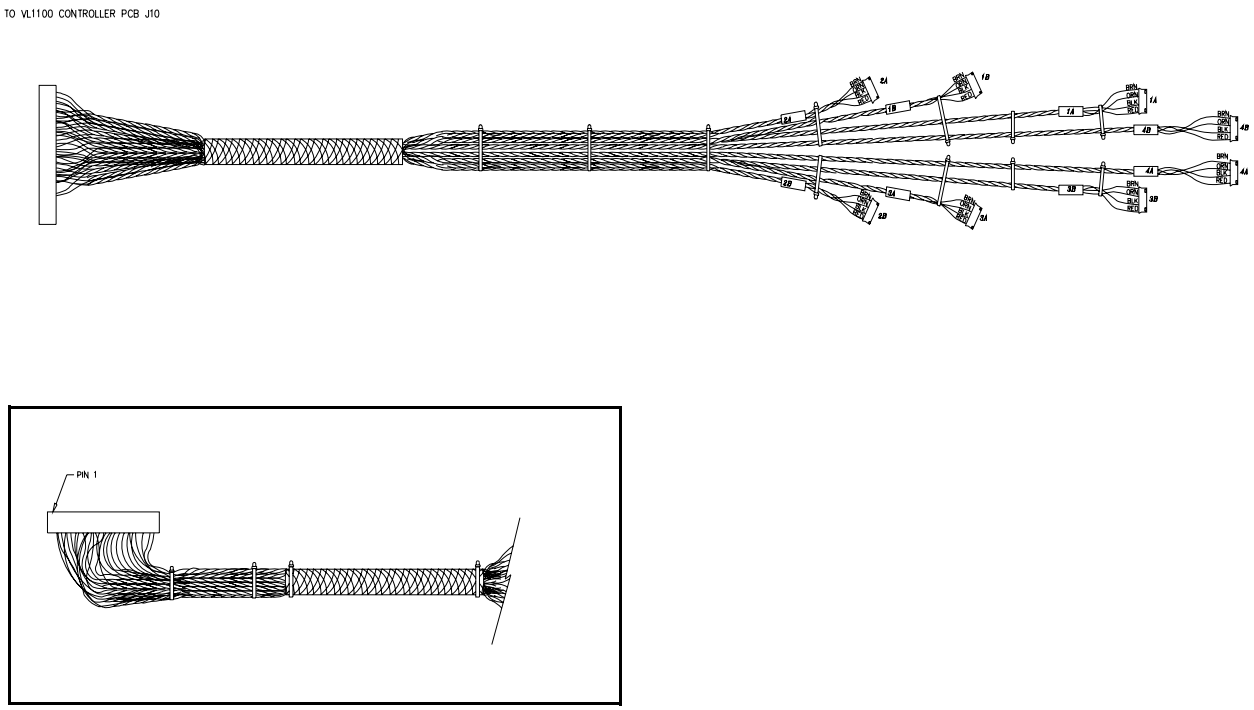


Figure 3-51: Shutter Harness Cabe Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Shutter Harness Cable Assembly (continued)

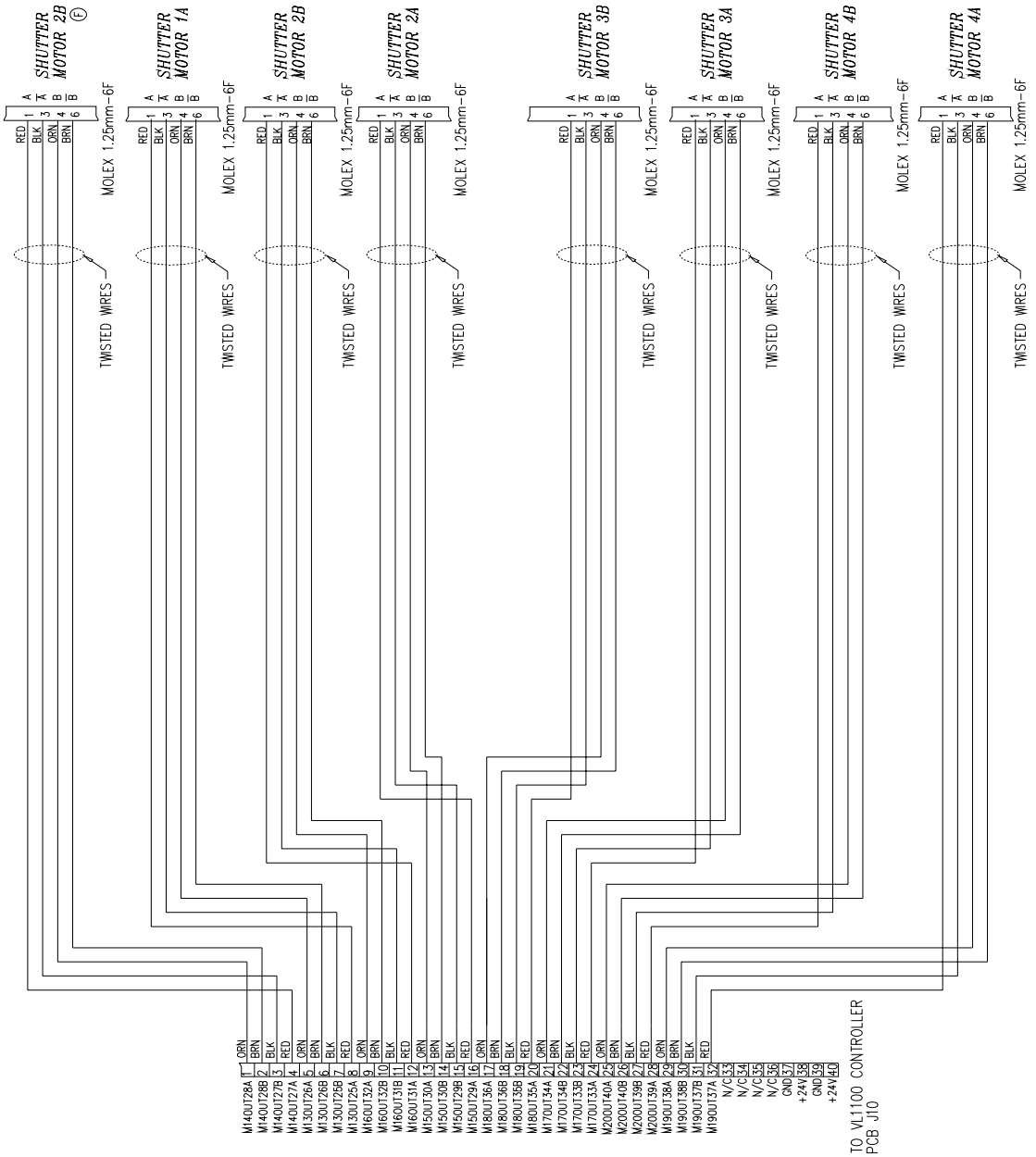


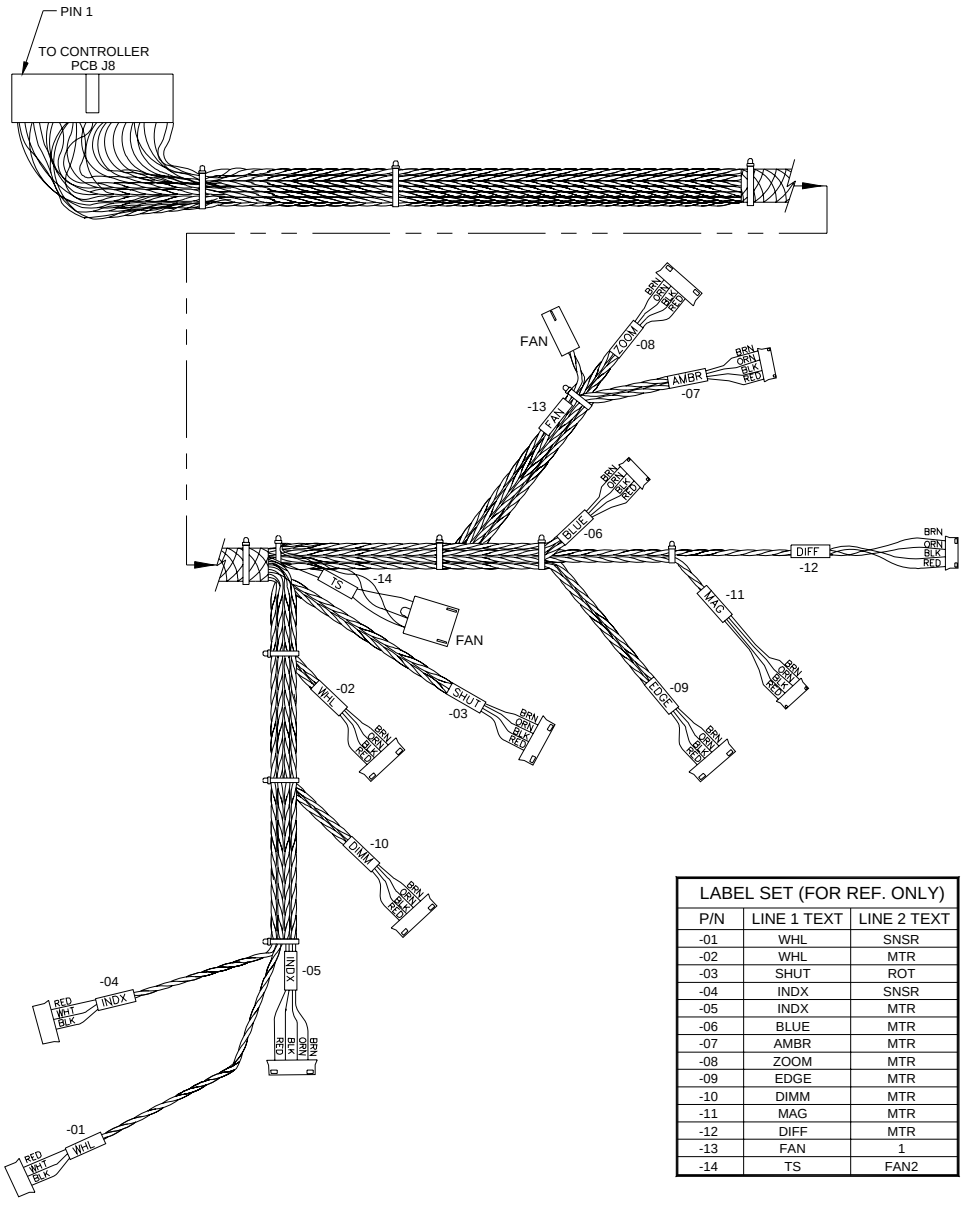
Figure 3-52: Shutter Harness Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Color/Gobo/Lens Harness Cable Assembly

25.9663.2050 Rev K

Refer to Figure 3-53 and Figure 3-54.



LABEL SET (FOR REF. ONLY)		
P/N	LINE 1 TEXT	LINE 2 TEXT
-01	WHL	SNSR
-02	WHL	MTR
-03	SHUT	ROT
-04	INDX	SNSR
-05	INDX	MTR
-06	BLUE	MTR
-07	AMBR	MTR
-08	ZOOM	MTR
-09	EDGE	MTR
-10	DIMM	MTR
-11	MAG	MTR
-12	DIFF	MTR
-13	FAN	1
-14	TS	FAN2

Figure 3-53: Color/Gobo/Lens Harness Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Color/Gobo/Lens Cable Assembly (continued)

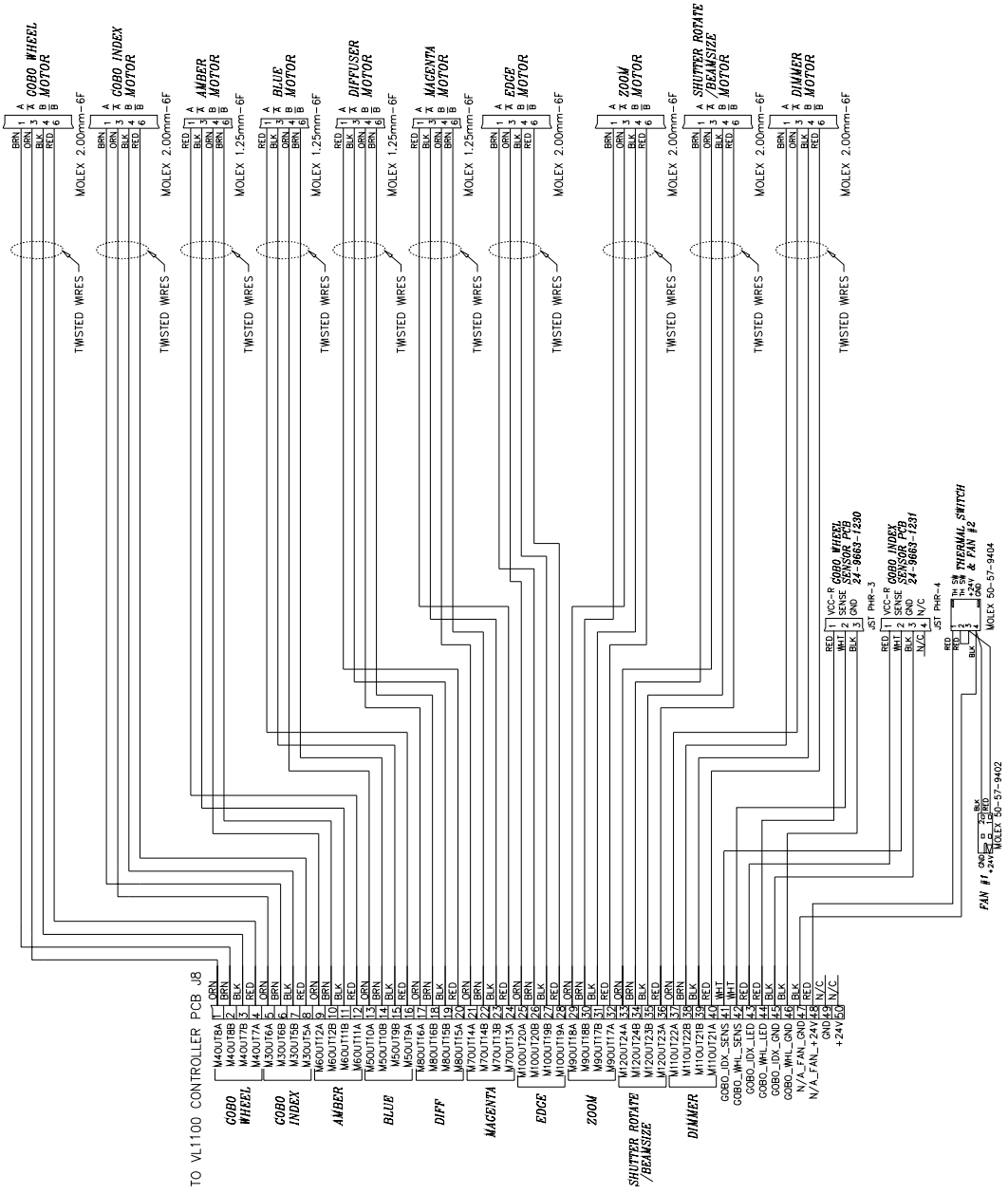


Figure 3-54: Color/Gobo/Lens Harness Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Dimmer to LVS Cable Assembly

25.9663.2826 Rev A

Refer to Figure 3-55.

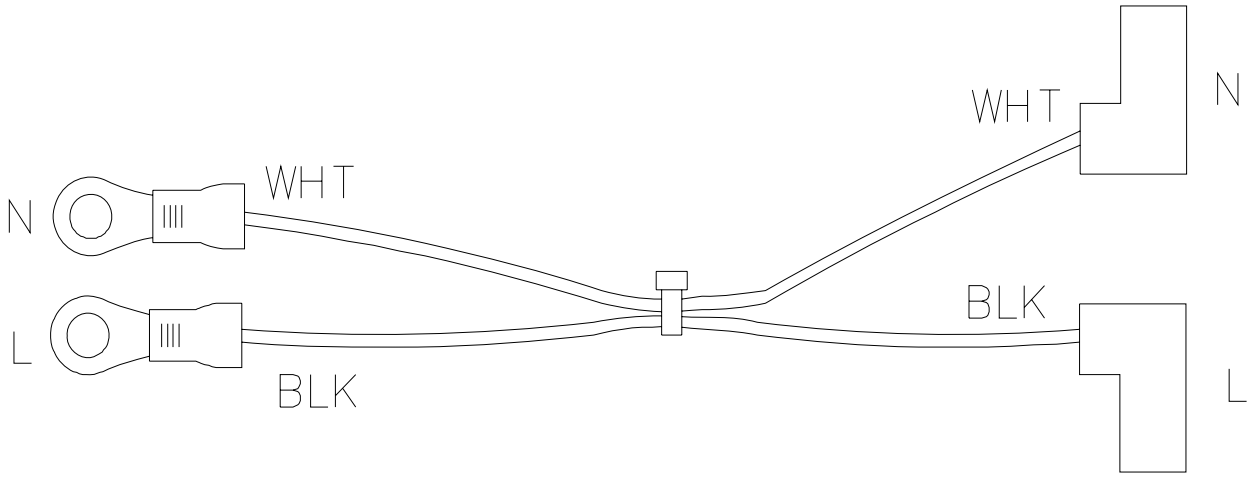


Figure 3-55: Dimmer to LVS Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Dimmer to Controller Cable Assembly

25.9663.2026 Rev 0

Refer to Figure 3-56.

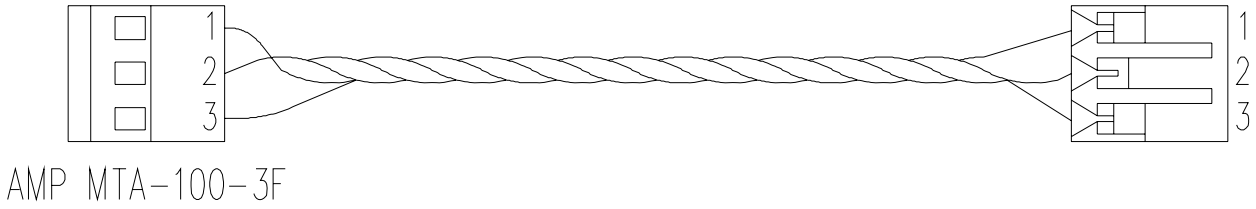


Figure 3-56: Dimmer to LVS Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Dimmer to Lamp Socket Cable Assembly

25.9663.2037 Rev 0

Refer to Figure 3-57.

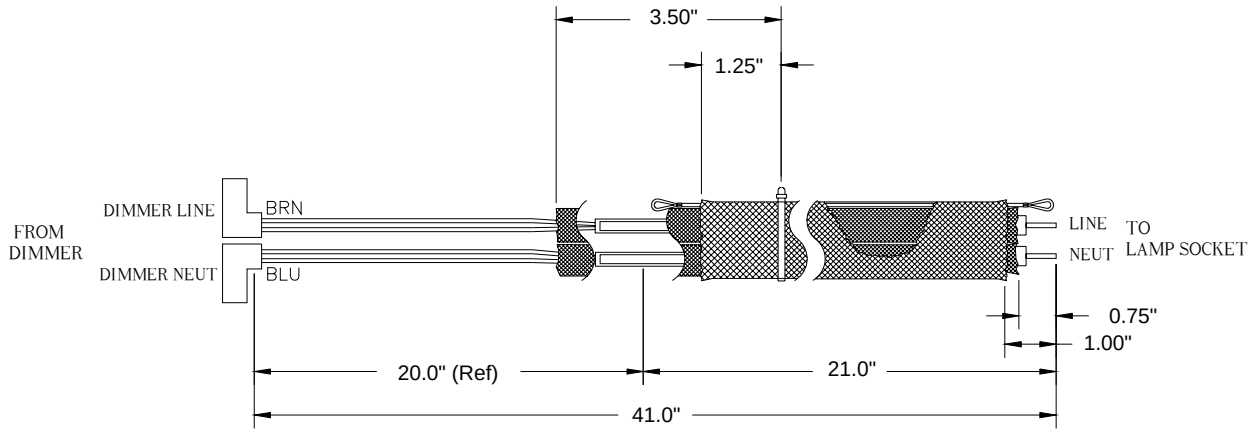


Figure 3-57: Dimmer to LVS Cable Assembly

NOTE: Cable assemblies are sold as complete assemblies only. Cable assemblies are shown for visual reference only.

Notes

APPENDIX A.

Technical Bulletins

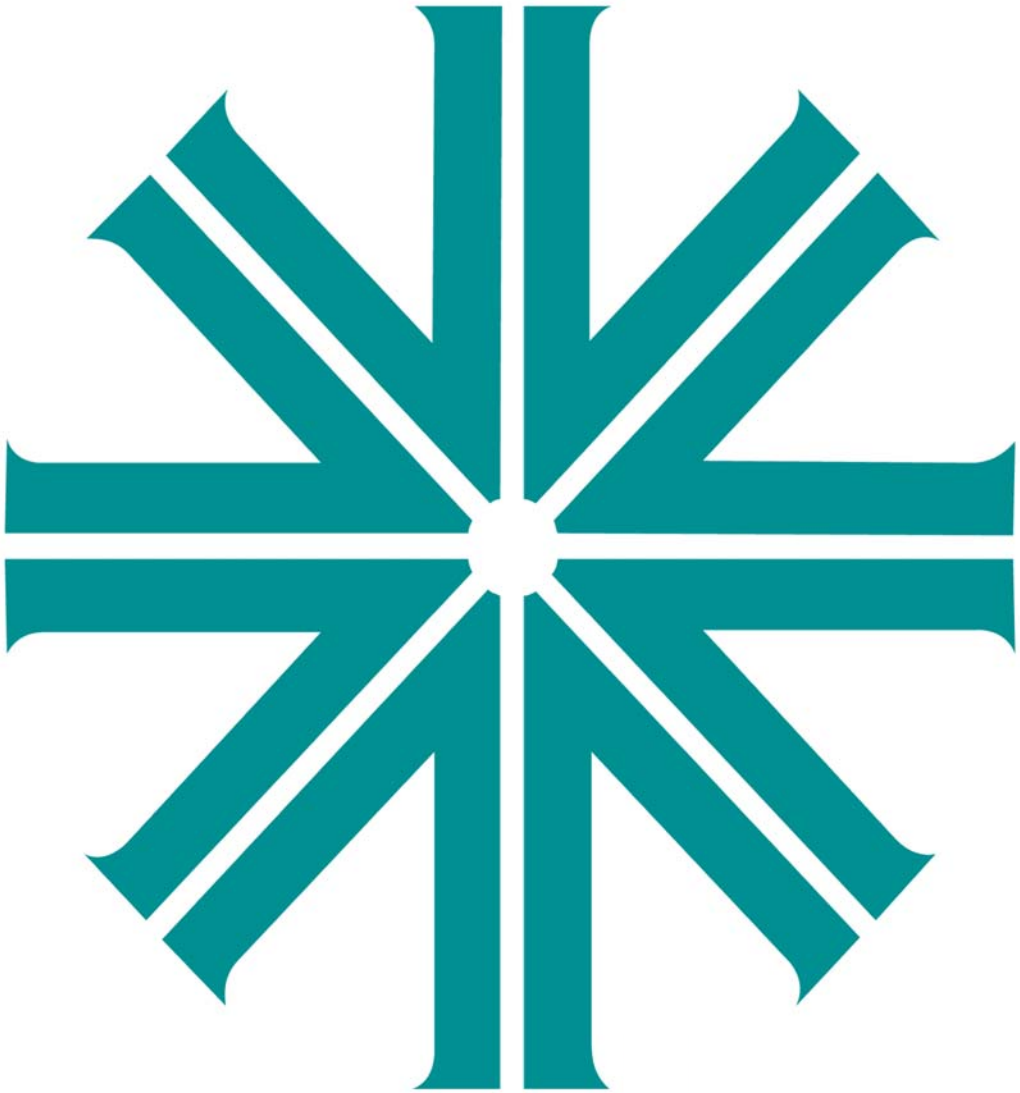
VL1100 ERS Luminaire Technical Bulletins

The following table identifies the current technical bulletins associated with the VL1100 ERS luminaire. These improvements have been incorporated into this manual.

Technical Bulletin or Notice Number	Description
TN-229A	Powering VARI✳LITE Luminaires From Dimmer Circuits - NOT RECOMMENDED
TN-230	Dousing Lamps Before Shutting Off Power
TN-232	Use of Third Party Accessories
TN-300A	All VL1000 / VL1100 Series Luminaires - Color System Drive Ring Part Number Change
TN-308	Series 500/1000/2000/3000/VLX Luminaires - Pan & Tilt Encoder PCB / Motor Assemblies Change Notice

Technical Bulletins, Software Updates, support, and other information is available online at www.vari-lite.com under the "Support" link. To request access to the password-protected support areas, please contact Vari-Lite Customer Service at 1-877-827-4548 or +1-214-647-7880 or entertainment.service@philips.com.

Notes



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